What's New
Canada-Chile Agreement
Canada-Chile Commission
Cooperative Activities
Canadian Implementation
FAQs
Publications
Citizen Submissions

Message from the Council

In February 1997, Chile and Canada signed a Free Trade Agreement, which includes two parallel agreements: one on labour and one on the environment. The agreements entered into force in July 1997. The Agreement on Environmental Cooperation demonstrates the importance given to environmental considerations in Canada and Chile.

The main objectives of the Agreement on Environmental Cooperation are to strengthen both the environmental cooperation between the two countries, and the effective enforcement of domestic environmental laws and regulations. Other objectives include: the promotion of sustainable development; cooperation to better conserve, protect and enhance the environment; and the promotion of economically efficient and effective environmental measures.

One of the fundamental aspects of the Canada-Chile Agreement on Environmental Cooperation is the promotion of transparency and public participation in environmental management. Guided by this principle, a web site for this agreement has been developed in each country, with a view to providing the public with clear and current information in this area.

The web site has been structured in such a way that you will be able to find answers to questions on the agreement in a rapid and efficient manner.

Welcome to our web site and feel free to share with us any comments, or questions, that you might have.

David Anderson
Minister of Environment
Canada

Gianni Lopéz Ramirez
Executive Director
National Commission for the Environment
CONAMA, Chile

Chilean National Secretariat

Français
Site Map | Home | Contact Us | Search
What's New | Canada-Chile Agreement | Canada-Chile Commission
Cooperative Activities | Canadian Implementation | FAQs | Publications

Green Lane Home | Contact Green Lane | Search the Green Lane | Canada Site

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What's New
Canada-Chile Agreement
Canada-Chile Commission
Cooperative Activities
Canadian Implementation
FAQs
Publications
Citizen Submissions

1997-1998 ANNUAL REPORT OF THE COMMISSION
July 1997 - November 1998

TABLE OF CONTENTS

1. Introduction

2. An overview of the Agreement and a Description of the Canada-Chile Commission for Environmental Cooperation

- Objectives of the Agreement
- Specific Obligations of the Parties
- The Canada-Chile Commission for Environmental Cooperation
- Applications of the Agreement to Canada and Chile

3. Report on some actions by Canada and Chile to fulfil Specific Obligations under the CCAEC

- Canada
- Chile

4. Activities of the Canada-Chile Commission for Environmental Cooperation

- Bilateral Cooperative Achievements
- Contacts

INTRODUCTION

The Canada-Chile Agreement on Environmental Cooperation (CCAEC) is the environmental side agreement to the Canada-Chile Free Trade Agreement. The CCAEC was signed in Ottawa, Canada on February 6, 1997 and entered into effect on July 5, 1997.

The Canada-Chile Commission for Environmental Cooperation (CCCEC) was established pursuant to the CCAEC. The Agreement also provides for the preparation of an Annual Report of the

Commission and specifies a range of areas that the report shall cover. These include both the activities of the Commission and the actions taken by each Party in connection with its obligations under the Agreement, including reporting on enforcement activities.

This Annual Report is divided into three sections:

- Section A provides a short overview of the Agreement and a description of the Canada-Chile Commission for Environmental Cooperation.
- Section B consists of reports by the Parties on some important actions taken to fulfil their specific obligations under the Agreement. Under the auspices of the CCAEC (the Agreement), Canada and Chile have each made a number of commitments to enhance environmental management within their own territory including taking appropriate government action to achieve high levels of environmental protection and compliance with its environmental and wildlife laws and regulations.
- Section C addresses the activities of the Canada-Chile Commission for Environmental Cooperation during the previous year.

A) An Overview of the Agreement and a Description of the Canada-Chile Commission for Environmental Cooperation (Commission)

1) Objectives of the Agreement

The objectives of the agreement are to:

- foster the protection and improvement of the environment in both countries;
- promote sustainable development based on cooperation and mutually supportive environmental and economic policies;
- increase bilateral cooperation to better protect the environment;
- strengthen cooperation on the development and improvement of environmental laws, regulations, policies and practices;
- enhance compliance with, and enforcement of, environmental laws and regulations;
- support the environmental goals and objectives of the Canada-Chile Free Trade Agreement;
- avoid creating trade distortions or new trade barriers;
- promote transparency and public participation in the development of environmental laws, regulations and policies;
- promote efficient and effective environmental measures; and
- promote pollution prevention policies and practices.

2. Specific Obligations of the Parties

Both Parties have agreed to enhance their environmental management systems in order to provide for high levels of environmental protection. This system shall ensure publication of laws and regulations respecting any matter covered by the Agreement. This commitment includes, to the extent possible, advance publication of proposed measures and provide opportunities for comment.

Both Parties have committed to ensuring that interested persons can request their competent authorities to investigate alleged violations of environmental laws and regulations and that persons with legally recognized interests have appropriate private access to remedies, processes or proceedings.

Both Parties have made specific commitments to ensure their administrative, quasi-judicial and judicial proceedings are open, fair and equitable.

Both Parties have committed to effectively enforce their environmental laws through appropriate government action. The Agreement provides for the participation of citizens, NGOs and governments with a view to ensuring that this commitment is kept. Citizens and NGOs may make submissions on enforcement matters to the Canada-Chile Commission on Environmental Cooperation asserting that a party is failing to effectively enforce its environmental laws. These provisions are found in Articles 14 and 15 of the Agreement. Part V of the Agreement provides a consultation and dispute resolution process that is available to Parties when a Party feels that the other is persistently failing to effectively enforce its environmental legislation.

In this Annual Report, Canada and Chile will report on actions undertaken to fulfill the specific obligations of the Parties under the Agreement.

3. The Canada-Chile Commission for Environmental Cooperation

The Canada-Chile Commission for Environmental Cooperation (CCCEC) comprises the Council, the Joint Public Advisory Committee (JPAC), and the Joint Submission Committee (JSC). The Commission is assisted in the implementation of the Agreement by two National Secretariats; one located in the territory of each Party.

The Council is the governing body of the Commission. The Honourable Christine Stewart, Canada's Minister for the Environment is Canada's representative on the Council. Rodrigo Egaña, Executive Director of Chile's National Environmental Commission (CONAMA), is the Chilean Council member. The Council met for the first time in November 1998, in Santiago, Chile.

The Agreement defines the functions of the Council. The Council is responsible for overseeing the activities of the Commission and promoting and facilitating cooperation between the Parties with respect to environmental matters.

The role of the **Joint Public Advisory Committee** (JPAC) is to provide advice to the Council on all matters within the scope of the Agreement. The JPAC consists of six members, three appointed by each Party for a two year term to act as a single, independent, binational advisory body. The JPAC meets at the time of the annual session of the Council and at other times as determined by the Chair of the Committee with the consent of the members.

The purpose of the JPAC is to integrate an advisory mechanism of independent citizens into the official structure of an intergovernmental agreement. The JPAC acts as a link between the Council and people and organizations interested in the environment and trade relationship between Canada and Chile.

The Agreement provides that citizens or NGOs may file submissions on enforcement matters asserting that a Party is failing to effectively enforce its environmental laws. The Agreement establishes the **Joint Submissions Committee** (JSC) to provide independent consideration of submissions on enforcement matters. The Council has appointed one Canadian and one Chilean to serve on this committee which will be activated as necessary to consider submissions.

The CCAEC stipulates that each country shall establish a **National Secretariat** to support the activities of the Canada-Chile Commission for Environmental Cooperation. The Canadian National Secretariat is located at Environment Canada's Headquarters. Its Executive Secretary is Andy Bowcott, International Relations Directorate, Policy and Communications Service. The Chilean National Secretariat is housed in the Chilean Commission for the Environment (Comisión Nacional del Medio Ambiente or CONAMA). Carlos Piña, Chief of International Policy Unit at CONAMA, is its Executive Secretary.

4. Application of the Agreement to Canada and Chile

The Agreement is applicable to all environmental laws and regulations within the jurisdiction of the federal government in Canada. Canada has committed to make its best efforts to make the Agreement applicable to all of its provinces.

The application of the Agreement to Chilean environmental laws and regulations will be phased in over a two year period as provided for in Annex 44.2 of the CCAEC. The Chilean government is conducting a major review of its environmental legislation. The Agreement lists roughly 160 laws which are immediately covered, and as of July 5 1999, the application of the enforcement provisions will apply to all remaining laws and standards, which meet the definition contained in the CCAEC.

B) Report on some important actions by Canada and Chile to fulfill Specific Obligations under the CCAEC

As this is the first Report of the Commission, the Parties decided that it would be beneficial to provide examples of environmental programs and measures adopted by each country in connection with its obligations as defined in the CCAEC (Articles 2 to 7, and 13.2 c).

Canada

The print version of *The State of Canada's Environment—1996* was completed and released in 1997 (Internet and CD-ROM versions were released in 1996). In addition, six new or updated bulletins in Canada's *National Environmental Indicator Series* were produced in the 1997/98 fiscal year. These documents are part of the State of the Environment Infobase which can be accessed from Environment Canada's Green Lane home page at *http://www.ec.gc.ca*.

In 1997 Canada continued its work on a national framework for environmental education. Environment Canada developed a plan to consult with provinces, non-government organizations and the environmental education community on a set of principles that will

provide a framework from which each province, organization and the federal government can develop sustainability education strategies consistent with their respective mandates.

Environment Canada's technology centers undertook various activities and programs to further scientific research and technology development and provide technical advice with respect to environmental matters in 1997.

The Canadian Environmental Assessment Agency (CEAA) is responsible for administering the federal environmental assessment process. In 1997, CEAA managed a total of eight public reviews. Federal departments and agencies reported, in accordance with their environmental assessment obligations under the Canadian Environmental Assessment Act, a total of 2910 screenings and 26 comprehensive studies.

Canada has a variety of economic instruments in place. At the federal level, Canada has implemented a transferable allowance program for methyl bromide (1995) and a similar program for HCFCs (1996) to help meet our obligations under the Montreal Protocol for the Protection of the Ozone Layer; and introduced cost-recovery charges for ocean dumping permit applications (1993) and is introducing cost recovery for ocean dump site monitoring.

In 1997 Canada published the following environmental regulatory initiatives:

- Amendments to the *PCB Waste Export Regulations* and the *New Substances Notification Regulations* (dealing with biotechnology products);
- The *Registration of Storage Tank Systems for Petroleum Products and Allied Petroleum Products on Federal Land*, the *Diesel Fuel Regulations* and the *Benzene in Fuel Regulations*.
- Amendments to the *Prohibition of Certain Toxic Substances Regulations* and the *Gasoline Regulations*.

In Canada, the federal and provincial governments share legislative authority over the environment. Environment Canada uses complementary tools to motivate compliance with environmental regulations. Compliance promotion activities include providing information and education. Enforcement is based on inspections and investigations carried out in accordance with national and regional inspection plans, and in response to complaints and tips from the public or other government agencies.

Both the *Canadian Environmental Protection Act* (CEPA) and the *Fisheries Act* (FA) allow the federal government to negotiate administrative arrangements with provincial enforcement agencies to share in local enforcement activities and maximize the efficiency of enforcement activities by both orders of government.

There are approximately 150 Environment Canada enforcement officers located in five regions and headquarters who enforce pollution and wildlife legislation for which Environment Canada is responsible. They are complemented by program specialists who develop and promote compliance and by and laboratory staff who carry out the necessary analysis.

Enforcement of environmental and wildlife legislation requires

specialized knowledge. The Enforcement Management Division designs and delivers a variety of basic and specialized courses to make sure inspectors, investigators and wildlife officers are well equipped for the special needs of the job. Training is also offered to other federal departments, provincial enforcement agencies and to other countries.

In Canada, the primary instrument for implementing the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) is the federal *Wild Animal and Plant Protection and Regulation of International and Inter-provincial Trade Act (WAPPRIITA)*. Most CITES infractions are investigated by federal agencies, particularly as they relate to wildlife trafficking.

In 1997, Environment Canada successfully implemented the first phase of the National Enforcement Management Information System and Intelligence Systems - NEMISIS, a new electronic information data base for tracking and managing the departments enforcement activities under all federal environmental and wildlife legislation enforced by Environment Canada.

In October 1997, the Auditor-General reported on the federal program to control transboundary shipments of hazardous waste, recommending the enhanced enforcement of the *Export and Import of Hazardous Wastes Regulations* and increased compliance with the manifest and certificate of disposal/recycling requirements of the legislation.

Chile

On January 1998, the Council of Ministers of the National Environmental Commission (CONAMA) approved the government policy on environmental issues; the *Environmental Policy for Sustainable Development*. This policy has been distributed in sectoral and regional seminars, and is part of a process to establish environmental policies for all the regions in the country.

The *National Environmental Information System* has been implemented through CONAMA´s web site. The public, thereby, has access to most of the Chilean environmental legislation, to international environmental agreements signed by Chile, to the management activities of the Environmental Impact Assessment System, to other programs of the Commission, and to other relevant information.

In 1997, a *Cadastre and Assessment of Native Chilean Plant Resources* was elaborated. It determines the extent and state of forests, ecosystems, and forest and plant resources. This information is available to the public through a geographic information system (GIS) in all regional offices of CONAF (National Forest Corporation), in conjunction with the regional environmental commissions (COREMAs).

In 1997, the Department of Citizen Participation and Environmental Education was created within CONAMA to increase public participation in the country's Environmental Policy. Basically, the objectives of this institutional effort are: to implement the mechanisms for citizen participation as provided for in the environmental management instruments (Environmental Impact Assessment System, Establishment of Decontamination and Prevention Standards and Plans); and to undertake programs and actions related to education and public awareness with respect to environmental issues. A joint project has been undertaken with the Ministry of Education to include environmental education in the

primary and secondary school curricula; major awareness and education programs; training for social leaders and municipal civil servants; and grants for environmental education projects.

One of the main achievements in terms of preventing environmental degradation has been the start up of the Environmental Impact Assessment System (SEIA), which is a mandatory since April 1997. From January 1990 up to now, the SEIA has received 874 investment projects with the potential to cause environmental impacts, of which 306 include investments of more than 12.9 billion US dollars in 1997.

In the context of promoting the use of economic instruments for the efficient achievement of environmental goals, CONAMA is elaborating a Draft Bill to be debated by the Government prior to sending it to Parliament on the implementation of *Tradable Emission Permits* (PETs) for air. Additionally, a pilot project has been initiated in municipalities of the Metropolitan Region, based on a study for the "*Design of Differentiated Rates for the Management of Residential Solid Waste based on the Amount Generated*". CONAMA is also administering a program that subsidizes the transformation of technologies that harm the ozone layer, within the framework of the Montreal Protocol. In addition, consideration is being given to legislation to ban imports of ozone depleting substances.

During 1998, emission standards on the discharge of industrial liquid waste to sewage systems, a review of and modification to standards to regulate noise levels, and the primary quality standard on breathable particulate matter (PM10) were officially published.

In 1998, the emission regulation standard to control light contamination was approved. This standard protects the astronomic quality of the skies in Regions II, III, and IV. Also the standard for arsenic air emissions and for the liquid discharge to sources waters were approved. In accordance with the corresponding regulations, the procedures were initiated to establish the following standards: standard to control odours associated with the manufacture of sulphur pulp in the pulp industry, quality standard to protect the use of continental waters, and the review of the air quality standard for sedimented particulate matter in the Huasco River basin, in Region III.

Currently, studies are being undertaken with a view to promulgate the following standards: primary quality standards for lead in air, standards to control odours associated with the fishing industry, standards for Nitrogen Oxide (NO_X), Volatile Organic Compounds (VOCs)and carbon monoxide (CO) in the cement, glass and steel industries and in boilers and turbines in the Metropolitan Region; emission standard for mobile NO_X sources for the technical inspection of catalytic-converter vehicles in the Metropolitan Region; emission standards for mobile sources for motorcycles in the Metropolitan Region; review of the primary quality standard on CO; review of the following primary quality standards: nitrogen dioxide (NO_2); sulphur dioxide (SO_2), total suspended particulates (TSP), CO, photochemical oxydants *expressed* such as ozone (O_3) , review of the PM (Particulate Matter) emission standard for stationary sources in the Metropolitan Region; review of the CO, total Hydrocarbons (THC); NO_X and particulate matter standards for Diesel buses and heavy vehicle emissions in the Metropolitan Region; and the secondary quality standard for marine water quality in the Bió Bió Region.

The Decontamination Plans for the copper smelter at Chuquicamata, Paipote Smelter and Ventanas Smelter came into force prior to 1997. This year, the Air Pollution Prevention and Decontamination Plan for

the Metropolitan Region and the Decontamination Plan for the Caltones Smelter were introduced. The final project of the Decontamination Plan for the Potrerillos Smelter is currently being reviewed.

In Chile, there are a number of institutions with enforcement rights with respect to environmental issues. Health Services, for example, are responsible for the protection of human health from potential environmental damage from air emissions and solid waste. The Superintendent of Sanitary Services (SISS) enforces compliance with all standards related to sanitary services and regulates companies with liquid waste emissions. The National Forest Corporation (CONAF) has responsibility for all forest resource related enforcement and for enforcement with respect to the appropriate use and preservation of protected Wildlife Areas and the wildlife therein. The General Waters Directorate (DGA) controls the use of continental water resources, while the General Directorate of the Maritime Territory (DIRECTMAR) is in charge of preserving the aquatic environment in the marine territories. The Enforcement department of the Ministry of Transportation and Telecommunications controls compliance with environmental legislation in the private and public transportation system and their externalities, specifically with respect to air emissions. The Agricultural and Livestock Service (SAG) enforces the legal and regulatory standards for the prevention and eradication of plant pests and diseases that can be transmitted to animals, as well as for the control of imports and use of pesticides and the conservation of soils and waters for agriculture. The National Geology and Mining Service (SERNAGEOMIN) monitors mining activities, specifically the potential for environmental damage from tailing ponds. The National fisheries Service (SERNAP) enforces the due process of application of standards relating to fishing, underwater fishing, and other forms of hydrobiological resource exploitation. Finally, municipalities undertake educational and other activities to prevent damage to the environment.

During 1997, a study was undertaken of the "*Application of Economic Disincentives in the Enforcement and Sanction in the Control of Urban Pollution*". This study led to a number of actions being taken by the Environmental Metropolitan Health Service (SESMA) to improve its system of sanctions.

During 1998, CONAMA within its functional responsibilities for coordination and verification of environmental enforcement, undertook an analysis and elaborated a proposal for the improvement of the national environmental enforcement system. The proposal is currently under internal review, prior to being presented to the Council of Ministers.

C) Activities of the Canada-Chile Commission for Environmental Cooperation

As 1997-98 was the first year of the Agreement, the focus of the work of the Commission and of the National Secretariats was on actions necessary to provide for the establishment of the institutions of the Commission and the development of initial proposals for cooperative activities. Diplomatic notes identifying Council members were exchanged.

The National Secretariats have had two meetings: December 1997 in Santiago, and June 1998 in Ottawa. Procedures for defining and establishing the necessary coordination and communication mechanisms between the two National Secretariats were developed. The National Secretariats have elaborated a series of procedural arrangements that will be considered for approval by the Council in order to establish the Commission. These are:

- Rules of Procedure for the Council;
- Rules of Procedure for the JPAC;
- Rules of Procedure for the JSC;
- Rules of Procedure for the Experts on Environmental Matters;
- Code of Conduct for the members of the JSC and the Experts on Environmental Matters;
- Guidelines for Submissions on Enforcement Matters; and
- Rules of Procedure for the National Secretariats.

In addition, the National Secretariats drafted an annual report for 1998, an annual program of work and budget for 1999, and worked on preparations for the 1st Meeting of the Canada-Chile Commission for Environmental Cooperation (CCCEC).

The Chilean government hosted the first regular session of the Council of the CCCEC in Santiago, Chile on November 9, 1998. The Council approved all the necessary CCCEC administrative rules and arrangements, as well as the program of work for 1999. The Council also appointed the Joint Submission Committee (Carlos Peña and David Johnston) and the Joint Public Advisory Committee (Asta Antoft, Harvey Mead, David Hunter, Eduardo Arriagada, Gustavo Lagos and Francisco Sabatini). A joint final communiqué containing more information can be found in the new web sites of the National Secretariats (http://can-chil.gc.ca and http://www.conama.cl/chile-canada).

Bilateral Cooperative Achievements

Before the entry into force of the Agreement on Environmental Cooperation, Canada and Chile had worked together on a series of environment-related activities. The Memorandum of Understanding (MOU) on Environmental Cooperation was signed between the Environment Canada, Industry Canada and the Chile National Commission for the Environment (CONAMA), and was extended in January 1998 for two more years. The objective of this MOU is to promote cooperation between the two countries in areas such as, environmental protection, conservation, sustainable development and transfer of clean technologies.

The MOU is managed by a Steering Committee consisting of one representative from each of the three signing institutions. The Steering Committee meets at least once a year. The last meeting took place in May 1998, in Ottawa, Canada.

The activities developed have been of benefit to departments and services involved in environmental matters, as well as to the private sector. To date, joint projects have been carried out in the following sectors: air and water regulations; environmental impact assessment, environmental economy; information systems; mining; and cleaner production.

These activities took the form of information exchange, training, dissemination of information, joint workshops, technical visits and participation with experts in various meetings and conferences

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What's New | Canada-Chile Agreement | Canada-Chile Commission
Cooperative Activities | Canadian Implementation | FAQs | Publications

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ANNUAL REPORT 1999

CANADA-CHILE COMMISSION FOR ENVIRONMENTAL COOPERATION

Table of Contents

MESSAGE FROM THE COUNCIL ii

THE ANNUAL REPORT AT A GLANCE 1

I. REPORT FROM THE JOINT PUBLIC ADVISORY COMMITTEE 2

II. COUNTRY REPORTS

The Canadian Report 4

The Chilean Report 10

III. REPORT ON THE 1999 PROGRAM AND BUDGET

Cooperative Activities 17

Budget 21

IV. ADDITIONAL INFORMATION

The Canada-Chile Agreement on Environmental Cooperation 22

The Commission for Environmental Cooperation 22

The National Secretariats 23

Contacts 24

MESSAGE FROM THE COUNCIL

In accordance with our obligations under the Canada-Chile Agreement on Environmental Cooperation (CCAEC), we are pleased to submit the 1999 Annual Report of the CCAEC.

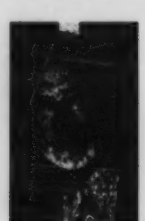
The CCAEC, which entered into force in July 1997, is one of two parallel agreements, one on the environment and one on labour, to the Free Trade Agreement reached between Chile and Canada in February 1997.

The CCAEC demonstrates the importance given to environmental considerations in Canada and Chile. Its main objectives are to strengthen both the effective enforcement of domestic environmental laws and regulations, as well as to enhance environmental cooperation between the two countries.

The Canada-Chile Commission for Environmental Cooperation achieved the objectives set out in its first annual work program. The work was concentrated in two priority areas. The first such area focused on enforcement and compliance with domestic environmental laws and regulations. Activities included the publication of the report *Environmental Enforcement and Compliance in Canada and Chile* and a meeting of managers and inspectors from both countries for a *Seminar on Enforcement Methods* held in Chile in September 1999. In the second priority area, public participation in environmental management, a report on *Public Participation of Civil Society in Environmental Management* was issued and a seminar will follow in the fall of 2000. Substantial efforts were also directed towards developing the CCAEC websites, which provide information on various programs to promote action at the community level in both countries. The newly-created Environmental Law Databases provides easy access through the internet to both Chilean and Canadian environmental legislation.

As a result of these cooperative efforts, we have a better understanding of the environmental situation in both countries and are now better equipped to share information. The work program for year 2000 will continue to address the areas of environmental enforcement and public participation and will also explore policy issues related to trade and environment.

We are pleased to acknowledge these accomplishments and look forward to further progress and continuous engagement of the public of our two countries in the years ahead.



David Anderson, Canada,

Adriana Hoffmann J, Chile

THE ANNUAL REPORT AT A GLANCE

The main objectives of Canada-Chile Agreement on Environmental Cooperation (CCAEC) are: to foster the protection and enhancement of the environment in both countries; to promote sustainable development policies; and to promote transparency and public participation in the development and improvement of environmental laws, regulations, policies and practices.

The CCAEC also provides for the preparation of an Annual Report by the Commission and specifies a range of areas that the report must cover. These include both the activities of the Commission for Environmental Cooperation established under the CCAEC and the actions taken by each Party in connection with its obligations under the Agreement, including reporting on enforcement activities.

The Annual Report covers the period of January 1999 to March 31 2000 and addressed the following:

- Section I: the Joint Public Advisory Committee (JPAC) report
- Section II: the Canadian and Chilean government country reports highlighting significant actions taken to fulfill each Party's specific obligations under the Agreement
- Section III: the report on the cooperative activities and expenses of the Canada-Chile Commission for Environmental Cooperation since January 1999
- Section IV: an overview of the Canada-Chile Agreement and the Commission for Environmental Cooperation and a report of the work carried out by the National Secretariats

I. REPORT FROM THE JOINT PUBLIC ADVISORY COMMITTEE

The Joint Public Advisory Committee (JPAC) met for the first time at the 1st regular meeting of the Canada-Chile Commission for Environmental Cooperation (CCCEC) in November 1998. It was an opportunity for the six members of the JPAC, discuss environmental issues confronting both Canada and Chile, and to gain an understanding of the tasks ahead of them.

The JPAC met during two other occasions, in March 1999 in Montreal and October 1999 in Toronto. In Montreal, they solicited suggestions from private sector and NGO representatives regarding the need for environmental cooperation between the two countries with a view to identifying areas where the JPAC might contribute to achieving the goals of the CCAEC.

The mandate of the JPAC is rather general, for example it provides advice to the Council on any matter within the scope of the Canada-Chile Agreement for Environmental Cooperation. Therefore, it appeared fundamental to the JPAC members to chose topics of mutual interest and, for the first year, to concentrate on one or two priority areas.

Given the importance of Canadian investment in mining in Chile and the challenges faced by both countries with respect to this resource sector, the JPAC decided that its main activity in 1999 would focus on the mining sector. A Mining Round Table took place in Toronto on October 29, 1999. The aim was to obtain accurate and up-to-date information with respect to environmental management and mining activity in both Canada and Chile. High caliber presentations and discussions by key specialists from the private sector, government and non-government organizations, as well as academia, allowed a dialogue that was constructive, realistic and which highlighted the most recent challenges and opportunities. The JPAC used the opportunity to develop a series of recommendations for the Council. In addition, the presentations have been compiled and published by the National Secretariats.

At the end of June, the JPAC will conduct a public consultation in conjunction with the Council Public Session. The JPAC will also lead the organization of a workshop on Public Participation in environmental management, which is now scheduled for the end of September 2000 in Chile.

The JPAC believes that Canada and Chile have many common objectives and, above all, much to share, but is also aware of the distance that separates the two countries. The JPAC encourages the use of telecommunication tools to increase information exchanges and cooperation between organizations, communities, academic institutions and companies so far apart. Canadians and Chileans can work together to ensure that

economic growth and performance goes hand in hand with the conservation of the environment, in order to create a truly sustainable prosperity.

II. COUNTRY REPORTS

THE CANADIAN REPORT

This section highlights actions taken by Canada in fulfillment of its obligations under the CCAEC, including environmental enforcement activities.

Article 2: General Commitments of the Agreement

The Parties under Article 2 of the CCAEC commit to:

a) *periodically prepare and make publicly available reports on the state of the environment;*
b) *develop and review environmental emergency preparedness measures;*
c) *promote education in environmental matters, including environmental law;*
d) *further scientific research and technology development in respect of environmental matters;*
e) *assess, as appropriate, environmental impacts; and*
f) *promote the use of economic instruments for the efficient achievement of environmental goals.*

Canada periodically prepares and makes publicly available reports on the state of the environment, such as *The State of Canada's Environment Infobase,* which is accessible on the Internet at http://www1.ec.gc.ca/~soer/default_e.htm. This site includes the *National Environmental Indicator Series, The State of Canada's Environment* and *A National Ecological Framework for Canada,* featuring maps and descriptions of Canada's Terrestrial Ecozones and ecoregions.

Examples of emergency preparedness measures undertaken by Canada include the upgrading of the national database for storing historical and current spill data from various contributing spill reporting agencies as well as the publication of the Field Guide for Oil Spill Response in Arctic Waters on behalf of the Emergency Prevention, Preparedness and Response (EPPR) Working Group of the Arctic Council.

The promotion of education in environment matters was advanced, for example, by the Climate Change Action Fund, which allocated funds to formal educational programs and activities such as the Pembina Institute and the Toronto Environmental Alliance. The funds were used to develop curricula on climate change.

Scientific research and technology development initiatives lead by the Environmental Technology Center (ETC) allowed for the national ambient air-monitoring of criteria pollutants and suspended particulate matter. The ETC also undertook extensive air toxics monitoring, including sampling and analyses, database maintenance, the generation of reports and scientific publications/presentations and the development of related new analytical methods. The Wastewater Technology Centre supported the

endocrine program for municipal wastewaters through the study of selected sewersheds and treatment technologies.

In 1999, the Canadian Environmental Assessment Agency completed one public review. Federal departments and agencies reported 3080 screenings and one comprehensive review in accordance with their environmental assessment obligations under the Canadian Environmental Assessment Act.

In 1999, economic instruments developed to achieve environmental goals included the Pilot Emission Reduction Trading project, which engaged approximately 20 companies and ENGOs. This was an industry-led initiative involving emission reduction credits for VOCs, NOx, SOx and CO_2. The credits were created as a result of reductions from stationary, mobile and areas sources.

Article 3: Levels of protection

Article 3 of the CCAEC establishes that each Party shall ensure that its laws and regulations provide for high levels of environmental protection and the Parties shall strive to continue to improve those laws and regulations.

After a five-year review, the revised Canadian Environmental Protection Act, or CEPA 1999, was proclaimed into law on March 31, 2000. The CEPA 1999 provides strong protection for the environment and for human health through science-based pollution prevention strategies. Pollution prevention is the cornerstone of the CEPA 1999, which provides the government with new tools to protect the environment and human health. Under the legislation, all substances currently in use in Canada are now assessed to determine whether they are toxic. The CEPA 1999 also establishes strict deadlines for controlling toxic substances and requires the virtual elimination of the most dangerous toxic substances.

The legislation provides Environment Canada enforcement officers with significant new powers to deal with polluters who break the law. The CEPA 1999 provides authority to inspect any place where there might be a substance or activity regulated under the Act. Enforcement officers have the authority to seize evidence related to a contravention. In addition, the CEPA 1999 includes sentencing criteria to promote consideration by the courts of matters such as the cost of remedying the damage done to the environment. Environmental Protection Alternative Measures (EPAMs) are also provided to allow for negotiated settlements reducing the delays and costs of lengthy court cases. It should be noted that the CEPA 1999 explicitly excludes certain serious offences from being eligible for EPAMs.

In 1999, Canada proposed and finalized the Prohibition of Certain Toxic Substances Regulations which prohibit the manufacturing, use, process, offer for sale, and importation into Canada of substances banned for reasons of environmental and health protection.

On April 11, 2000, the Environment Minister, David Anderson, introduced the Species at Risk Act (SARA) legislation in the House of Commons. This proposed legislation aims to prohibit the destruction of endangered or threatened species and their critical habitats in Canada. The Act also provides the emergency authority to list species in imminent danger. The purpose of this proposed legislation is to prevent Canadian indigenous species, subspecies and distinct populations of wildlife from becoming extirpated or extinct, to provide for the recovery of endangered or threatened species and to encourage the management of other species to prevent their being put at risk.

The proposed legislation calls for the establishment of the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as an independent body of experts responsible for assessing and identifying species at risk. It provides that COSEWIC's assessments are to be reported to the Minister of the Environment and to the Canadian Endangered Species Conservation Council. It also authorizes the Governor-in-Council to establish by regulation the official list of species at risk based on that process.

A number of other legal instruments currently in force will assist in the management of species. These include the Fisheries Act, the Migratory Birds Convention Act, the National Parks Act, the Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act, the Convention on International Trade and Endangered Species, and the Canada Wildlife Act.

Responsibility for the protection of endangered species is shared between the federal and provincial/territorial levels of government. As such, the SARA complements the work done by provincial and territorial governments under the Accord for the Protection of Species at Risk.

Article 4: Publication

Article 4 of the CCAEC establishes that each Party shall ensure that its laws, regulations, procedures and administrative rulings of general application respecting any matter covered by this Agreement are promptly published or otherwise made available in such manner as to enable interested persons and the other Party to become acquainted with them.

Regulatory initiatives published in 1999 include amendments to the Gasoline Regulations and the Prohibition of Certain Toxic Substances Regulations which were published in the *Canada Gazette, Part II*. The Sulphur in Gasoline Regulations, the Ozone Depleting Substances Regulations and the Federal Halocarbon Regulations were proposed in the *Canada Gazette, Part II*.

Article 5: Government Enforcement Action

Article 5 of the CCAEC indicates that with the aim of achieving high levels of environmental protection and compliance with its environmental laws and regulations, each Party shall effectively enforce its environmental laws and regulations through appropriate governmental action.

- The CEPA 1999 provides new powers for enforcement officers and analysts appointed by the Minister of the Environment to enforce the law. Environmental protection alternative measures and environmental protection compliance orders provide new mechanisms to deal with a contravention.

- The NEMISIS (National Enforcement Management Information System and Intelligence System) designed to track and manage enforcement activities, was further developed and improved upon.

- Environment Canada in conjunction with the Royal Canadian Mounted Police (RCMP), and enforcement agencies from other countries developed a "Train the Trainer Course for Environmental Crimes", under the auspices of INTERPOL. The course trains police agencies around the world on how to deal with environmental crimes, such as the smuggling of hazardous waste and ozone depleting substances.

- Environment Canada's Enforcement Branch is maintaining a home page on the Environment Canada site on the web at www.ec.gc.ca/enforce/homepage/default.htm which contains information on inspections, investigations, enforcement legislation, regulations, guidelines, policies, reports and recent enforcement actions.

- Permits, licenses and other authorisations are used to regulate activities, such as hunting and trapping, the transboundary movement of hazardous wastes, the international trade in endangered species and those activities which may result in the release of contaminants into the environment.. Between 1998 and 1999, Environment Canada processed 8,594 notices for proposed transboundary shipment of hazardous wastes.

- A major national workshop for Environment Canada enforcement staff was held to strengthen Environment Canada's National Enforcement Program in several key areas. This resulted in an initiative comprising fifteen major projects relating to decision-making, human resources management, intelligence gathering capacity and the assessment of present and future resource requirements. To date, the majority of these projects have been implemented.

- Each year, in co-operation with its five regional offices, Environment Canada prepares an inspection plan that targets specific elements of the regulated community according to, but not limited to, the following: environmental significance, geographic scale, compliance history and profile, nature of the regulatory provisions,

operational complexity and capacity, the number, and the type of targeted population or activities. For example, Environment Canada's wildlife inspection staff conducted approximately 6000 inspections under the federal *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act* which implements Canada's commitment to the Convention on the International Trade in Endangered Species (CITES).

- There is a legislated requirement for Environment Canada to report to Parliament annually on the administration and enforcement of the CEPA 1999 as per s.342 of the Act and the *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act* (WAPPRIITA) as per s.28 of the Act.

- New regulations were announced in January 2000 under WAPPRIITA to improve the implementation and enforcement of the CITES in Canada and to reduce the administrative burden on the public.

- Environment Canada has actively participated in the development of the ISO 14000 series of voluntary standards including the three related to environmental auditing. ISO 14000 is an environmental management standards series which establishes standards with respect to management systems, organization evaluation and product assessment. The federal government encourages the adoption and implementation of these voluntary, non-legal standards in the private sector.

Article 6: Private access to remedies

Article 6 of the CCAEC establishes that each Party shall ensure that interested persons may request the Party's competent authorities to investigate alleged violations of its environmental laws and regulations and shall give such requests due consideration in accordance with law. Further, each Party shall ensure that persons with a legally recognised interest under this law in a particular matter have appropriate access to administrative, quasi-judicial or judicial proceedings for the enforcement of the Party's environmental laws and regulations.

Section 17(1) of the CEPA 1999 allows any individual residing in Canada, who has reached the age of majority, to apply to the Minister of the Environment for an investigation of alleged offences for matters pertaining to CEPA. Section 22 (1) of the CEPA 1999 provides that an individual who has applied for an investigation may bring an environmental protection action if (a) the Minister failed to conduct an investigation and report within a reasonable time; or (b) the Minister's response to the investigationwas unreasonable. The action may be brought in any court of competent jurisdiction against a person who committed an offence under this Act.

Article 7: Procedural guarantees

Article 7 of the CCAEC indicates that each Party shall ensure that its administrative, quasi-judicial proceedings are fair, open and equitable.

Canada has administrative, quasi-judicial and judicial proceedings available for the enforcement of environmental laws and regulations. Persons are given an opportunity to make representations to support or defend their respective positions and to present information or evidence. Decisions are provided in writing, are made available without undue delay and are based on information or evidence on which the parties were given the opportunity to be heard. Canada provides parties to such proceedings, where appropriate, the right to seek review of final decisions by impartial and independent tribunals.

THE CHILEAN REPORT

This section addresses the actions undertaken by Chile to comply with its commitments under the Canada-Chile Agreement on Environmental Co-operation, including environmental enforcement activities.

Article 2: General Commitments

Article 2 of the Canada-Chile Agreement on Environmental Cooperation has the following general obligations: (a) periodically prepare and make publicly available reports on the state of the environment; (b) develop and review environmental emergency preparedness measures; (c) promote education in environmental matters, including environmental law; (d) further scientific research and technology development in respect of environmental matters; (e) assess, as appropriate, environmental impacts; and (f) promote the use of economic instruments for the efficient achievement of environmental goals.

In 1999, a National Report on the State of the Environment in Chile was prepared to provide an account of the country's environmental situation. Released in April 2000, the report deals with the following topics: Chile's environmental condition and outlook starting from the early 1990s, recent developments, current state of the environment and future outlook, information on the impact of environmental management, challenges and priorities in environmental policy, and management over the coming decade in Chile.

On January 9, 1998, the Board of Directors of the National Environmental Commission (CONAMA) approved implementation of Chile's Environmental Policy for Sustainable Development. Three key components on environmental matters emerged during the implementation of this policy in 1999:

- the creation of a conceptual framework for examining environmental issues;
- an explanation of the foundations, principles and guidelines for developing environmental policy; and
- the development of the Government of Chile's Environmental Agenda, which contains 52 specific commitments that make up the Work Plan up to the year 2000 and the identification of 14 topics for the government to explore.

The major environmental policy challenge facing the Government of Chile is to achieve sustainable development so as to ensure the well-being of present and future generations.

The National Environmental Information System (SINIA), established in 1998, is fully operational and accessible via the Internet since April 1999. This allows for fast and timely contact between the public and the institutions that generate environmental information. SINIA offers access to information from various public institutions dealing

with the environment and serves as a support for environmental management as well as decision making at the sectoral and regional levels. It was established in compliance with the requirements of Act 19.300 under Chile's *Ley de Bases del Medio Ambiente* (LBMA).

The drafting of the first official document on the subject of natural resources, entitled "Proposed Renewable Natural Resource Policy for Sustainable Development", was accomplished in 1999.

The Department of Citizens' Participation and Environmental Education, established in 1997 with the aim of promoting public involvement in Chile's environmental policy, carried out various activities in the following four areas in 1999:

1. facilitating access to information, publishing a series of documents and organizing outreach and awareness activities, such as the First Youth Art and Environment Exhibit which took place in August 1999;

2. promoting inclusion of environmental subjects in school curriculums by establishing the "Free Air School", setting up environmental laboratories in schools and organizing a "Meeting on Environmental Education in Rural Areas" which took place in May 1999;

3. promoting public involvement, mainly through the Environmental Protection Fund, established to finance local community initiatives with the aim of environmental enhancement, training and outreach; and

4. broadening the scope and improving the quality of public participation in environmental management tools, the Environmental Impact Assessment Board, and the drafting of plans and standards for environmental clean-up.

Created June 5, 1998, by Executive Order No. 90, the National Council for Sustainable Development came into existence April 23, 1999. The Council is the assessment agency for the President of the Republic. It is made up of 92 representatives from the public and private sectors. The primary role of the Council is to present proposals for implementing and monitoring sustainable development in Chile. Its aim is to ensure participation by the country's various social groups in decision-making on sustainable development and environmental protection. The Chair of the Council is Mr. Alvaro García H., who is the Minister and Chair of the Board of Directors of CONAMA as well as the Minister and Secretary-General of the Office of the President. The Executive Secretary is Adriana Hoffman J., who is the CONAMA Executive Director. In creating the Council, the Government of Chile joined the ranks of the over 140 countries which already had such bodies. This brings Chile into compliance with major environmental commitments undertaken at Rio de Janeiro in 1992.

The Environmental Impact Assessment Board (SEIA) continued full-scale operations in 1999. Its mandate is to integrate the environmental factor in project planning and

performance in both public and private sectors in Chile. It seeks to ensure that all projects are environmentally sustainable. Submitted to the Board in 1999 were 829 projects for investment or economic activity throughout the country (a 3.6 percent increase over 1998). Of these, 47 were environmental impact studies and 782 were environmental impact statements, representing a total investment of US$5.942 million. Of all the projects dealt with during the year (including those submitted before 1999), 626 relates to the environment, of these, 595 were approved and 31 rejected. Further, 555 projects continued to be assessed within the legally stipulated period. Of all the projects submitted in 1999, 31 were withdrawn.

To comply with the requirements in Annex I to the Madrid Protocol on the Antarctic Treaty, which came into force in Chile in early 1999, CONAMA, together with the Ministry of External Relations and the Chilean Antarctic Institute, drew up regulations on environmental impact assessment of investment projects in the Antarctic. The regulations are now in the approval phase.

CONAMA's Environmental Economics Unit has successfully developed activities in the following sectors:

- Technical and economic assessments were conducted of draft proposals for the following standards: the standard on release of odours associated with sulphate pulping, the standard on particulate emissions in the Huasco River basin, the protection quality standard for the use of inland bodies of water, the revision of the primary quality standard for emissions of inhalable particulates (PM10), the primary quality standard for atmospheric lead emissions, and the technical standard for management of non-hazardous sludge from processing plants.

- With regard to cross-border emissions permits, discussion workshops were held to evaluate the fee system for emissions of particulates in urban areas and the proposed system and legislation developed by CONAMA were revised.

- Workshops were conducted with respect to the Sustainable Development Indicators System in four regions of Chile. Indicator selection workshops were set up in three other regions.

- A policy was drawn up for the certification of the environmental quality of Chilean products for domestic sale or export and a technical study was conducted regarding the creation of an environmental quality seal.

- Concerning environmental accounting, aquatic resource accounting is serving as a model in the Aconcagua River basin. As for soil use accounting, an international workshop was held to define methodology, and a pilot project was put in place in the Bio-Bio River region.

- Other activities were initiated in the environmental economics sector. These included an economic assessment of environmental insurance for the

Environmental Impact Assessment Board, the Environmental Economics Unit served as the secretariat for the National ISO 14 000 Committee, studies conducted on the implementation of environmental taxes, on economic instruments applied to environmental clean-up and on the environmental impacts of economic policy instruments and, lastly, a policy to encourage "green" manufacturing received support.

Article 3: Levels of Protection

Article 3 of the Canada-Chile Agreement on Environmental Cooperation establishes that each Party shall ensure that its laws and regulations provide for high levels of environmental protection and shall strive to continue to improve those laws and regulations.

Among other things, CONAMA's mission is to preserve and enhance the quality of the environment. In line with this environmental policy, the Government of Chile is drafting environmental quality standards and emission standards. The first set of standards regulates the concentration levels and timelines of maximum and minimum levels of permissible elements, compounds, substances, chemical and biological sub-products, energy, radiation, viabrations, noise or any other element whose presence or absence may constitute a risk to the environment. The second set of standards are intended to reduce the quantity of pollutants released, or generated by, a facility or emissions source so as to prevent environmental degradation and to rehabilitate the polluted sector.

A program was put in place to assess and monitor pollutants as a means to monitor compliance with established standards. When a standard is violated, the Regional Environmental Commission (COREMA) asks for an Executive Order declaring the area to have concentrations of pollutants above allowable levels CONAMA then prepares a clean-up plan for the area in question. The most notable accomplishments in 1999 were the adoption of the María Elena y Pedro de Valdivia clean-up plan, the adoption of the Potrerillos clean-up plan and the redrafting of the Chuquicamata clean-up plan in force since 1997.

Article 4: Publication

Article 4 of the Agreement establishes that each Party shall ensure that its laws, regulations, procedures and administrative rulings of general application respecting any matter covered by this Agreement are promptly published or otherwise made available in such a manner as to enable interested persons and the other Party.

In 1999, legislation on the following standards was published in the Official Gazette (*Diario Oficial*): the standard to regulate atmospheric emissions of arsenic-based pollutants (Executive Order No. 165, June 2, 1999), the emissions standards to regulate light pollution for regions II, III and IV (Executive Order No. 686, August 2, 1999), the emissions standards to regulate foul odors (hydrogen sulfide compounds and (methyl) mercaptans TRS gases) associated with the manufacturing of sulphate pulp.

Currently, the following standards are in the last stage of elaboration: the emissions standard concerning discharge of liquid waste into water bodies, the particulate emissions standard in the Huasco River basin, and the standard for discharge of liquid industrial waste into sewage systems.

Article 5: Government Environmental Enforcement Action

Article 5 of the Agreement on Environmental Cooperation establishes government enforcement measures with the aim of achieving high levels of environmental protection and compliance with environmental laws and regulations, each Party shall effectively enforce its environmental laws and regulations through appropriate governmental action.

In Chile, environmental enforcement is undertaken by various public agencies, an approach which favours sector-based enforcement. Recent years have shown the need for systematic, overall co-ordination of the enforcement process. Given the existence of new procedures for developing standards and plans as well as the Environmental Impact Assessment Board, CONAMA has a growing responsibility for enforcement. As a result of developments mentioned earlier, CONAMA, along with various ministries and agencies, has drawn up an action plan on enforcement policy. The plan focusses on co-ordination based on medium- and long-term objectives to promote conservation of Chile's environmental heritage while meeting the country's international commitments. CONAMA is also considering putting in place a system for promoting self-compliance with environmental requirements by the country's manufacturing sector. To make these monitoring and enforcement objectives operational on June 1, 1999, the Board of Directors of CONAMA approved the establishment of operating environmental enforcement committees, both nationally and regionally. Such committees were formed throughout the country in September 1999.

Under the framework of the Canada–Chile Agreement on Environmental Co-operation, a series of activities are being undertaken to harmonize environmental legislation.

In this regard, two operating committees have been set up:

The Air Operating Committee
This task force is drafting a proposed Executive Order to unify the five standards governing particulate emissions in urban areas. The standards are the following: Ministry of Health Executive Orders Nos. 4 and 1.583 (1992), No. 1.905 (1993), and No. 812 (1995); Exemption to Resolution No. 15.027 of the Urban Areas Environmental Health Agency (SESMA) (1994); and Executive Order No. 16 of the Ministry of the Secretariat of the President (1998).

The Water Operating Committee
The six participating agencies — the Water Branch (DGA), the Office of the Superintendent of Health Services (SISS), the Agriculture and Livestock Agency (SAG), the National Geology and Mines Agency (SERNEAGEOMIN), the Urban Areas Environmental Health Agency (SESMA) and CONAMA — have drawn up and signed a multilateral co-operation agreement with the objective of stimulating enforcement co-ordination. The committee has identified possible areas of inter-agency co-operation The agencies involved have signed bilateral co-operation agreements.

Article 6: Private Access to Remedies

Article 6 establishes that each Party shall ensure that interested persons may request the Party's competent authorities to investigate alleged violations of its environmental laws and regulations and shall give such requests due consideration in accordance with law. Each Party shall ensure that persons with a legally recognized interest under its law in a particular matter have appropriate access to administrative, quasi-judicial or judicial proceedings for the enforcement of the Party's environmental laws and regulations.

Law 19.300 in the General Environmental Law (LBMA) establishes the right to take action against a resolution on environmental matters. This can be done, for example, where resolution refuses the development of an environmental impact declaration or where a resolution rejects or establishes conditions to an environmental impact study. These actions are designated to be exercised by the person responsible for the respective project before the Executive Director, in the case of a declaration, or before the Board of Directors of CONAMA , in the case of studies. It is important to indicate that this right can also be exercised by members of the public and by those who directly contributed to an environmental impact study and whose contributions have not been properly addressed.

The LBMA also provides for actions which can be undertaken to reverse environmental damage. Those eligible to avail themselves of this are natural, judicial, public or private persons who have suffered damage or prejudice, municipalities if the facts fall within their respective jurisdictions and the State, through the Council for Defense for the State. The actions are presented before the examining magistrate as a civil matter in the jurisdiction in which the facts originate or in the affected jurisdiction, at the magistrate's discretion.

Article 7: Procedural Guarantees

Article 7 indicates that each Party shall ensure that its administrative, quasi-judicial and judicial proceedings are fair, open and equitable.

In 1999, 25 investigations were presented to the Executive Direction and the Board of Directors of CONAMA. Out of the 25, 21 were investigations by people responsible for projects and 4 by people involved in studies.

The Political Constitution of the Republic of Chile (CP) recognizes the exercise of the constitutional guarantees protection action. Among these constitutional guarantees is the right to live in a pollution-free environment (Art 19 No8). The protection action is applicable when the right to live in a pollution-free environment is affected by an arbitrary and illegal act attributed to a determined authority or person. This action is instituted in the corresponding Court of Appeal, which is required to adopt immediately the necessary provisions in order to reestablish this right.

To date, there are nine investigations on environmental protection underway.

Furthermore, the Political Consitution recognizes the exercise of the public right of an annulation action. Such action has as its objective to prevent any magistrate, person or group of people from acquiring other authority or rights than those explicitly established under the Constitution and applicable laws. This action is instituted in the Ordinary Tribunals of Justice according to the ordinary proceedings in the Civil Proceedings Code.

To date, there are four annulation actions underway dealing with environmental matters.

The law 19.300 recognizes, as well, the exercise of the ordinary indemnity action. This action is to be initiated by the Party directly affected by the environmental damage caused and has as its objective the reparation of damage. The process is instituted before the Ordinary Tribunals of Justice (Tribunales Ordinarios de Justicia) according to the terms established in the Civil Proceedings Code.

III. REPORT ON THE 1999 PROGRAM AND BUDGET

COOPERATIVE ACTIVITIES

Cooperative activities approved under the 1999 Annual Program of the Commission focused on two major themes: enforcement of and compliance with environmental legislation, and public consultation and participation in environmental management. This section presents a brief description and status report of the projects.

99.1 ENFORCEMENT OF AND COMPLIANCE WITH ENVIRONMENTAL LEGISLATION

99.1.1 Overview of Enforcement and Compliance Frameworks in Chile and Canada

The objective of this project is to provide a baseline understanding of current policies and practices in the area of environmental law enforcement in both Canada and Chile. In the CCAEC, both Parties committed to effectively enforce their respective environmental laws and regulations through appropriate government action.

CONAMA and Environment Canada coordinated the preparation of the report entitled *Enforcement and Compliance Frameworks in Chile and Canada*. The Canadian section includes an overview of the constitutional context, federal environmental laws and commitments, enforcement structure and philosophy; compliance promotion, inspection planning, enforcement tools, enforcement and compliance policies, compliance indicators and training. The Chilean report covers its constitutional, legal and institutional background, its regulations, its control and enforcement environmental legislation and its compliance with environmental legislation.

The draft report served as input to the enforcement seminar project 99.1.2 held in September 1999 in Santiago, Chile. It was, and remains a good vehicle for sharing information on the enforcement structure and compliance activities currently in place in Canada and Chile.

The final report entitled *Environmental Enforcement and Compliance Frameworks in Canada and Chile* was published in June 2000 and is available on the National Secretariats' websites http://can-chil.gc.ca and http://www.conama.cl/chile-canada.

99.1.2 Seminar on Effective Enforcement Policies and Approaches

The objective of this project was to exchange information and expertise on environmental law enforcement and compliance approaches, tools and policies with a view to improving enforcement practices and identifying possible areas of cooperation.

A meeting of Canadian and Chilean policy makers and managers, responsible for enforcing environmental laws and regulations, was organized in Santiago, Chile on September 29 and 30, 1999. Special attention was given to natural resources, waste, air, and water sectors, and environmental impact assessment systems.

Over 50 participants attended the seminar, including senior enforcement managers from several Chilean departments as well as four Canadian experts.

The workshop program and a summary report of the discussions are available on the National Secretariats' websites.

99.2 PARTICIPATION OF CIVIL SOCIETY IN ENVIRONMENTAL MANAGEMENT

99.2.1 Public Consultation and Participation in Environmental Management

The objective of this project was to enhance and strengthen the participation of the public in environmental management and to promote environmental stewardship and awareness in Canada and Chile. A joint report was prepared on existing models, mechanisms and tools for public participation in environmental management.

CONAMA and Environment Canada prepared a joint report, which describes and analyses the public participation systems in place in Chile and Canada. The Canadian section deals with the issue at the federal level, the role of public participation, trends and challenges at a national and international level, consultation methods and success stories and existing opportunities for engaging the public. The Chilean section describes a national level approach with respect to public participation in environmental matters, civil society's participation in the National System of Environmental Management in particular the Environmental Impact Evaluation System (SEIA), the development of environmental quality norms and decontamination plans. It also deals with public participation in different bodies and describes different initiatives currently underway in Chile.

The report entitled *Public Consultation and Participation in Environmental Management in Canada and Chile* has been printed and is now available on the National Secretariats' websites.

99.2.2 Workshop on Public Participation in Environmental Decision Making

The JPAC will organized a workshop, based on the findings of the *Public Consultation and Participation in Environmental Management in Canada and Chile* (project 99.2.1), scheduled to take place in Santiago, Chile in the year 2000. Participants will look at ways in which to improve public participation in environmental management in both Chile and Canada.

99.2.3 Action at the Community Level Website

The main objective of this project was to facilitate the exchange of information regarding community-based environmental initiatives in both countries and to share successful experiences of programs and policies which advance community action. The intent was to make information available via internet in order that direct contacts could be established between communities and citizens of the two countries.

A description as well as summaries of the major national environmental programs operating at the community level in both countries were prepared. Canada presented community programs in which Environment Canada is involved, such as Millennium Eco-Communities, Ecosystem Initiatives, Eco-Action 2000, the Climate Change Action Fund and Strategies for a Living Planet. Chile organized its programs under two main categories, the "Chile I care for you" Campaign and local community projects financed by the Environmental Protection Fund in 1999.

This new section of the National Secretariats' websites was opened to the public at the end of December 1999.

99.2.4 Information on the Canada-Chile Agreement on Environmental Cooperation (CCAEC)

The overall goal of this long-term project is to provide the general public with easy access to current information on the CCAEC and related bilateral cooperative activities through the internet. This project supports the CCAEC's objective to promote transparency and public participation.

The web sites of the National Secretariats, which were launched at the first council session in November 1998, are one of the main tools to disseminate information about the objectives and text of the Agreement; the Commission, the implementation of the Agreement and cooperative activities. This information is available in the three official languages of the CCAEC (English, French, and Spanish). Although the two sites are maintained independently by each National Secretariat, efforts are made to have a similar structure and content.

In 1999, the two web sites were made more user friendly and more effective in meeting the public's need for information. Information is updated on a regular basis and a new

section was added to provide a status report on the implementation of the Annual Program projects. The Internet addresses of the National Secretariats are http://can-chil.gc.ca and http://www.conama.cl/chile-canada.

99.2.5 Environmental Law and Regulation Database

The objective of this project was to facilitate access, through the internet, to basic information on federal or national environmental laws and regulations in effect in both countries.

CONAMA and Environment Canada are in the process of setting up a comprehensive public environmental acts and regulations database. It will be a valuable resource for government program staff, industries, specialists, lawyers and international organizations. The database contains summaries on selected environmental legislation, with links to text versions.

The database will be officially inaugurated at the Council session in June 2000 and is accessible on the National Secretariats' websites.

BUDGET

As per the 1999 Annual Program and Budget approved by the Council in November 1998, expenses related to the three broad components of the budget, namely cooperative activities, expenses related to the Joint Public Advisory Committee (JPAC), and expenses related to the work of the Joint Submissions Committee (JSC), were shared by the two parties.

Under the rubric of cooperative activities, actual expenses were as estimated in the Budget, i.e. $60,000 Canadian dollars or 18.3 million Chilean pesos. In addition, financial and in-kind support was provided by both Environment Canada and CONAMA to help implement the projects and cover other activities. Administrative and logistical support was also provided to help carry out the various tasks and responsibilities of the National Secretariats, including the organization of the two Council Sessions.

With respect to the JPAC, besides the reimbursement of travel expenses to attend meetings, the Council authorized the JPAC to hold a Roundtable on Mining and the Environment in October 1999, in combination with the semi-annual JPAC meeting which took place in Toronto.

As no submissions on enforcement matters were received in 1999, the only expenses incurred to support the JSC are related to the organization and participation in a seminar on the submission process, which took place at the end of August 1999, in Santiago, Chile.

IV. ADDITIONAL INFORMATION

This section provides an overview of the Agreement and a description of the Commission. It also contains a summary of the work done by the Canadian and Chilean National Secretariats.

THE CANADA-CHILE AGREEMENT ON ENVIRONMENTAL COOPERATION

The Canada-Chile Free Trade Agreement (CCFTA) and the CCAEC entered into force in July 1997. The goal of the CCAEC is to ensure that environmental laws and regulations in both countries provide for high levels of environmental protection. Under the CCAEC, the Parties committed to enhancing their cooperation, to effectively enforcing their environmental laws and regulations, to promoting sustainable development, to supporting the environmental goals and objectives of the CCFTA and to increasing transparency, public participation and pollution prevention. The Agreement also provides for citizens submissions on enforcement matters.

The Agreement establishes the forum through which Canada and Chile conduct cooperative activities and confirms the right of each country to establish its own policies, priorities and levels of environmental protection.

THE COMMISSION FOR ENVIRONMENTAL COOPERATION

The Canada-Chile Commission for Environmental Cooperation (CCCEC) is comprised of the Council, the Joint Public Advisory Committee (JPAC), and the Joint Submission Committee (JSC). The Commission is assisted in the implementation of the Agreement by two National Secretariats, respectively located in each capital region.

The **Council** is the governing body of the Commission. The Honourable David Anderson, Canada's Minister for the Environment, is Canada's representative on the Council. Adriana Hoffmann J., Executive Director of Chile's National Environmental Commission (CONAMA), is the Chilean Council member. The Council met for the first time in November 1998, in Santiago, Chile. The Council is responsible for overseeing the activities of the Commission and promoting cooperation between the Parties with respect to environmental matters.

The role of the **Joint Public Advisory Committee** (JPAC) is to provide advice to the Council on all matters within the scope of the Agreement. The JPAC consists of six members, three appointed by each Party for a three year term, to act as a single, independent, binational advisory body. The purpose of the JPAC is to integrate an advisory mechanism of independent citizens into the official structure of an

intergovernmental agreement. The JPAC acts as a link between the Council and people and organizations interested in the environment and trade relationship between Canada and Chile.

The Agreement established the **Joint Submissions Committee** (JSC) to provide independent consideration of submissions on enforcement matters. The Council appointed one Canadian and one Chilean representative to serve on this committee. On August 26 and 27 1999, the members of the JSC, Carlos Peña of Chile and David Johnston of Canada, met for the first time in Santiago, Chile, to participate in a workshop which addressed the responsibilities and obligations of the JSC under the CCAEC as well as matters related to the implementation of the submission process according to Articles 14 and 15 of the Agreement.

THE NATIONAL SECRETARIATS

The CCAEC stipulates that each country shall establish a **National Secretariat** to support the activities of the Canada-Chile Commission for Environmental Cooperation. The Canadian National Secretariat is located at Environment Canada's Headquarters. Its Executive Secretary is Jenna Mackay-Alie, Director Americas Branch, Policy and Communications Service. The Chilean National Secretariat is housed in the Chilean Commission for the Environment (Comisión Nacional del Medio Ambiente or CONAMA). Alvaro Sapag, Chief of the Legal Department and the International Policy Unit at CONAMA, is its Executive Secretary.

The two National Secretariats continued to work in close collaboration in 1999. Some of the key activities included :

- coordinating the implementation of the six projects approved under the *1999 Program and Budget*, namely the preparation of two reports on enforcement and public participation, the organization of a workshop on enforcement in Santiago, the development of new web pages on community programs and environmental legislation and improvement of the National Secretariats web sites;
- answering requests for information and disseminating information about the CCAEC;
- providing administrative support to the JPAC for their meetings and activities, such as the Mining Round table in October 1999;
- planning and organizing the seminar for the Joint Submission Committee in August 1999;
- providing assistance and information to the Council, including with respect to the appointment of the Experts in Environmental Matters;
- negotiating and adopting an administrative procedure for submissions on enforcement;
- arranging two meetings of Chilean and Canadian government officials on trade and the environment; and
- planning the second meeting of the Canada -Chile Commission for Environmental Cooperation and the public session.

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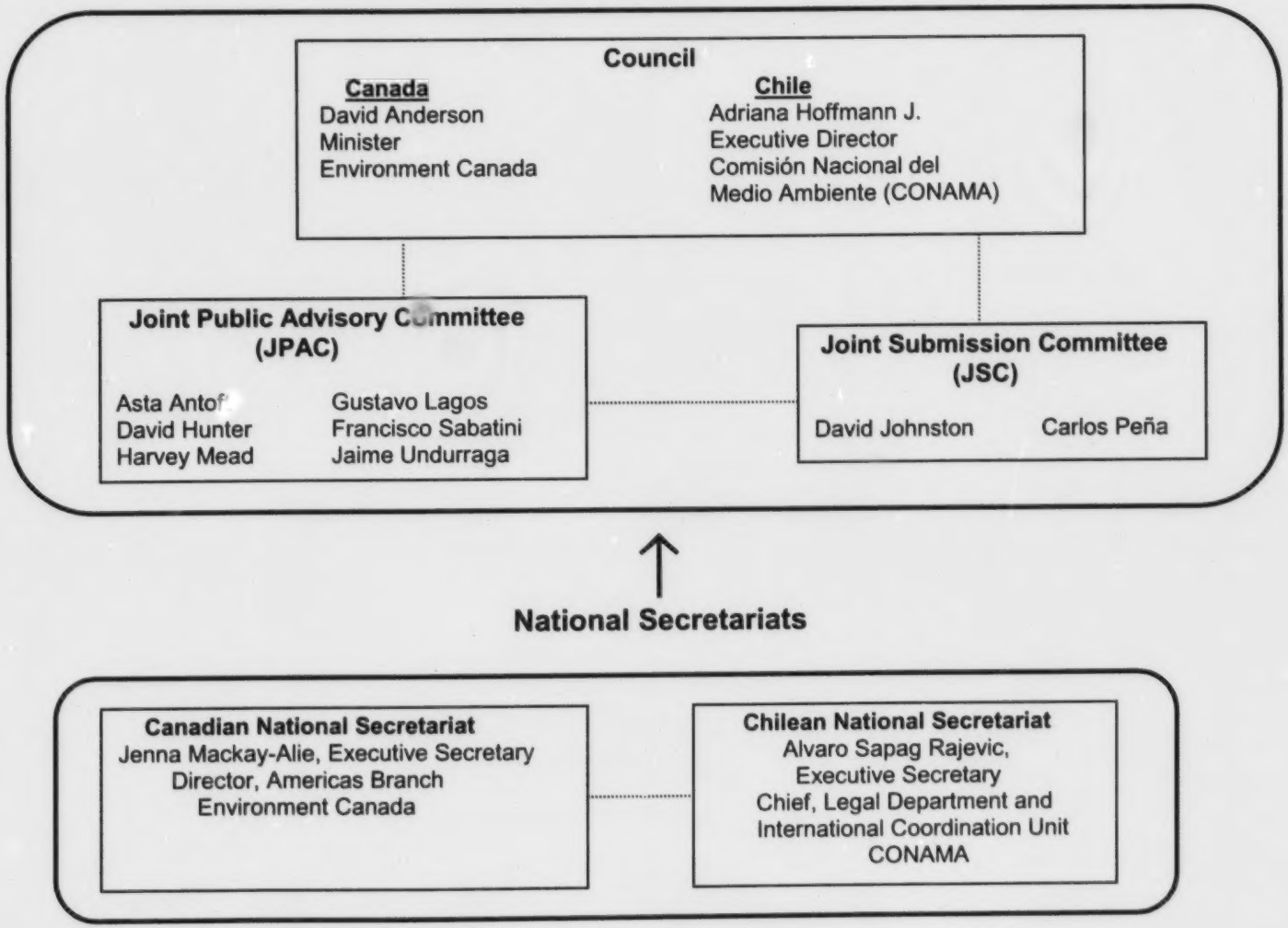
Canada-Chile Agreement on Environmental Cooperation (CCAEC)

Commission for Environmental Cooperation



Accord de coopération environnementale
Acuerdo de Cooperación Ambiental
Agreement on Environmental Cooperation

REPORT FROM THE CANADA-CHILE COMMISSION FOR ENVIRONMENTAL COOPERATION (2002)
PRELIMINARY VERSION

THIRD REPORT OF THE CANADA-CHILE COMMISSION FOR ENVIRONMENTAL COOPERATION (2002)

Table of Contents

MESSAGE FROM THE COUNCIL.....i

THE ANNUAL REPORT AT A GLANCE.....1

I. REPORT FROM THE JOINT PUBLIC ADVISORY COMMITTEE 2

II. COUNTRY REPORTS

The Canadian Report.....3

The Chilean Report.....19

III. REPORT ON THE 2000-2001 PROGRAM AND BUDGET

Cooperative Activities.....27

Budget.....31

IV. REPORT ON SUBMISSIONS ON ENFORCEMENT MATTERS 32

V. ADDITIONAL INFORMATION

The Canada-Chile Agreement on Environmental Cooperation 33

The Commission for Environmental Cooperation 33

The National Secretariats 33

Contacts.....34

Communiqué from March 2001 Meeting of Environment Ministers of the Americas.....35

Communique from March 2002 Meeting of Health and Environment Ministers of the Americas 40

MESSAGE FROM THE COUNCIL

In accordance with our obligations under the Canada-Chile Agreement on Environmental Cooperation (CCAEC), we are pleased to submit the 2000 Annual Report of the activities and programs developed under the above-mentioned agreement.

The CCAEC is a parallel agreement to the Free Trade Agreement that was signed in February 1997. It came into effect in July of the same year.

The CCAEC demonstrates the importance that our countries place on environmental issues and bilateral cooperation in our quest to achieve our mutual global objectives.

Our commitment to environmental cooperation is demonstrated in the objectives of the agreement, which are to increase both countries' enforcement of domestic laws and regulations as well as promote compliance, foster cooperation on environmental issues and improve public participation in environmental management.

Within the context described above, the Canada-Chile Commission for Environmental Cooperation achieved the objectives set out in its second annual work program. The work targeted three priority areas. The first of these areas focused on enforcement and compliance with domestic environmental laws and regulations. Activities included a workshop entitled "Environmental Enforcement Information System and Possibility of Implementation in Chile" (August 2001). During the workshop, Canada presented its National Enforcement Management Information System and Intelligence Systems (NEMISIS) and Chile reported its progress in creating a unified enforcement information system. The second priority area – public participation in environmental management – was addressed through a seminar "Public Participation in Environmental Decision-Making in Canada and Chile", which was conducted in October 2000. The objectives of the seminar were to promote extensive discussion in both countries in order to raise awareness of the need and benefits of focusing on public participation as a means of improving and optimizing environmental management. The third and final priority area was trade and the environment. Key activities included round table discussions on trade and the environment (October 2000 and May 2001) that brought together high-level representatives from both countries to share information, experiences and points of view on the link between international trade and the environment. This activity brought to light other ways in which both countries can work together on this highly important global issue. Topics discussed included the precautionary approach and environmental assessments of free trade agreements. Substantial steps were also taken to develop the CCAEC Web sites, efficient and effective tools with which to provide interested parties with information on the activities and programs developed under the agreement.

These cooperative efforts have provided us with more detailed information, a better understanding of the environmental realities of our countries and more efficient tools with which to share information. The Third Work Program will continue to address the issues of environmental enforcement, public participation, trade and the environment. A Policy Forum will also be created to explore the issue of health and the environment, and make us, signatories to this bilateral cooperation agreement, act on the mandate set forth during the Summit of the Americas held in Quebec. The mandate was based on the agreements reached during the

Extraordinary Meeting of Environment Ministers of the America and the Caribbean organized by the Canadian government and held in Montreal in March of 2001.

We acknowledge these achievements and look forward to making further progress in order to reaffirm our commitment to the environment and the welfare of our citizens.

David Anderson
Canada`s Minister for the Environment

GianniLópez Ramírez
Executive Director
Chile`s National Commission for the Environment

THE ANNUAL REPORT AT A GLANCE

The main objectives of Canada-Chile Agreement on Environmental Cooperation (CCAEC) are: to foster the protection and enhancement of the environment in both countries; to promote sustainable development policies; and to promote transparency and public participation in the development and improvement of environmental laws, regulations, policies and practices.

The CCAEC also provides for the preparation of an Annual Report by the Commission and specifies a range of areas that the report must cover. These include both the activities of the Commission for Environmental Cooperation established under the CCAEC and the actions taken by each Party in connection with its obligations under the Agreement, including reporting on enforcement activities.

The Annual Report addresses the following:

Section I:	Report of the Joint Public Advisory Committee (JPAC)
Section II:	Canadian and Chilean government country reports highlighting significant actions taken during the year 2000 to fulfill each Party's specific obligations under the Agreement
Section III:	Report on the cooperative activities and expenses of the Canada-Chile Commission for Environmental Cooperation since June 2000.
Section IV:	Report on Submissions on Enforcement Matters
Section V:	an overview of the Canada-Chile Agreement and the Commission for Environmental Cooperation and a report of the work carried out by the National Secretariats

I. REPORT FROM THE JOINT PUBLIC ADVISORY COMMITTEE

On October 3-4, 2000, the Joint Public Advisory Committee (JPAC) organized a seminar in Santiago, Chile on "Public Participation in Environmental Decision Making in Chile and Canada". Four key themes were discussed throughout the seminar: Public Participation in Environmental Management, Strengthening Civil Society for Environmental Management; The role of civil society in monitoring, assessment and oversight of environmental regulations and policies; and Public participation and Environmental disputes. These themes were discussed by knowledgeable professionals from the public and private sector at an event representing over sixty people representing government, non-governmental organizations, academia and others. The activity was separated into presentation and breakout sessions where detailed discussions took place on the themes.

In addition to the workshop on public participation, the JPAC met several times via conference call to discuss issues related to the implementation of the Agreement.

II. COUNTRY REPORTS

THE CANADIAN REPORT

ARTICLE 2 - GENERAL COMMITMENTS

Article 2(1)(a) - State of the Environment Reports

Two reports were published under the federal government's new Vision for State of the Environment (SOE) Reporting in 2000. Environment Canada produced *Ecological Assessment of the Boreal Shield Ecozone,* and Agriculture and Agri-Food Canada published *The Health of Our Water — Toward Sustainable Agriculture in Canada*. SOE reports serve two key purposes: to report to Canadians on environmental issues and ecosystems of national significance; and to foster the use of science in policy and decision-making.

Each report satisfies the content and presentation guidelines for the federal government's reporting program described in the New Vision for SOE Reporting under the five Natural Resource Departments (5NR) Memorandum of Understanding on Science and Technology for Sustainable Development. These reports are accessible in print and on the Internet at www.ec.gc.ca/soer-ree/English/National/soeass.cfm (see also res2.agr.ca/research-recherche/science/Healthy_Water/toc.html for the Agriculture report).

Three other Environment Canada SOE reports were largely completed by the end of 2000, for publication in the first half of 2001:

- *Tracking Key Environmental Issues*;
- *The State of Municipal Wastewater Effluents in Canada*; and
- *Nutrients in the Canadian Environment* — This report will accompany the science assessment *Nutrients and Their Impact on the Canadian Environment*, which will also be published in 2001.

Statistics Canada published an SOE-related report, *Human Activity and the Environment 2000*, which provides a statistical picture of Canada's environment with special emphasis on human activities and their relationship to ecosystems such as: air, water, soil, plants, and animals. This report is available as a package —book and CD-ROM. See www.statcan.ca/english/ads/11-509-XPE/ for further information.

The State of the Great Lakes Ecosystem Conference (SOLEC) produced two background papers for its 2000 Conference: *Selection of Indicators for Great Lakes Bas Ecosystem Health* (March 2000), and *SOLEC 2000 - Implementing Indicators* (November 2000).

One new bulletin in Canada's *National Environmental Indicator Series* was published in 2000: *Environmental Sustainability of Canada's Agricultural Soils*. The *National Environmental Indicators Series* is available in hard copy, and electronically on the State of Canada's Environment Infobase web site www.ec.gc.ca/soer-ree/English/National/IndWelc.cfm. New and

updated regional environmental indicators are posted on Environment Canada's Pacific and Yukon Region Environmental Indicators website www.ecoinfo.org/env_ind.

The State of Canada's Environment Infobase

The State of Canada's Environment Infobase website on Environment Canada's Green Lane (www.ec.gc.ca/soer-ree/), operational for the past five years, continues to evolve and provides access to an increasingly broad range of environmental and ecological information and reports. The web site provides access to: SOE reports; Canada's National Environmental Indicator Series; the National Ecological Framework; and environment-related Tools, including electronic links to: the Ecological Monitoring and Assessment (EMAN) Network; Pacific and Yukon Region's environmental indicators, 5NR SOE-related products, and provincial, territorial, and some international agency documents related to SOE Reporting.

Sustainable Community Indicators

The Sustainable Community Indicators interactive software package was released in June 2000. It is designed to help communities develop indicators, monitor their progress towards sustainable development and facilitate the exchange of indicator-related information. In response to client reactions, plans for more flexible tools, directly available on the Internet, have been developed. Further information can be found on the Environment Canada website at: www.ec.gc.ca/scip-pidd.

National Water Quality Index

After testing and refining the index, the Water Quality Index Technical Subcommittee of Canadian Council of Ministers of the Environment's (CCME) Water Quality Guidelines Task Group produced the Canadian Water Quality Index Technical Report in March 2000.

Canadian Information System for the Environment

In August 2000, Minister Anderson invited top level experts with diverse backgrounds to form a Task Force to advise him on a design and implementation strategy for a Canadian Information System for the Environment. The mandate of the Task Force was to develop plans for a demand driven information system that could meet three specific goals: to enable informed public policy decisions; to provide accountability to citizens concerning the management of Canada's environment; and, to enable citizens and civil society to make informed decisions which include environmental implications. An interim report from the Task Force was provided to the Minister in May, 2001. This report was used as the basis for wide consultations.

Wild Species 2000 - The General Status of Species in Canada

Wild Species 2000 provides an overview of the status of Canada's species. It brings the results of Provincial, Territorial, and Federal monitoring efforts onto a single platform for the first time. This report is the first of a series, with others to be released every five years. This is the commitment of all of Canada's Ministers responsible for wildlife in the Accord for the Protection of Species.

In this first report are the general status assessments for a broad cross-section of over 1 600 Canadian species, from all provinces, territories, and ocean regions. In addition to the written

report, datasets are available on a companion CD and on the website http://www.wildspecies/ca where the following are available: a report card to all Canadians; a guide indicating where more information is needed; an effective tool for improved conservation; and a testament to the cooperative will of Canadians to protect wild species.

Biodiversity Portrait of the St. Lawrence

In the month of August 2000, the Conservation Branch – Quebec Region made public (among others, on the Internet) the *Biodiversity Portrait of the St. Lawrence.* This portrait summarizes the knowledge acquired over more than thirty (30) years on the St. Lawrence fauna and flora. This piece of work elaborated within the framework of the St. Lawrence Action Plan Vision 2000 (SLAP) is unique in Canada to this day. It is both a decision-making tool in terms of conservation and sustainable development and an exceptional teaching tool.

Article 2(1)(b) - Environmental Emergency Preparedness Measures

Environmental Emergency Plans for Toxic Substances:

Under the new Canadian Environmental Protection Act (CEPA, 1999) proclaimed in 1999, once a substance is declared "toxic" to human health or to the environment, the Ministers of health and the environment have new authorities to manage these toxic substances. This ministerial action can take several forms, including regulations, pollution prevention plans, environmental emergency plans, guidelines, codes of practice and economic instruments.

A plan under Section 199 of CEPA 1999 represents one of the important components of a comprehensive emergencies management framework and will assist in reducing gaps in or between federal and provincial legislation for the prevention of, preparedness for, response to, and recovery from an environmental emergency. However, environmental emergency plans will not be required for all substances which have been declared toxic under CEPA. Rather, the process to determine which substances require an environmental emergency plan involves the review of substance specific data such as the quantity in commerce or storage, toxicity of the substance, spill frequency and severity, and whether or not the risks posed by an uncontrolled, unplanned, or accidental release of the substance are being adequately managed.

To date, guidelines for the Implementation of the Environmental Emergency Planning Provisions of Part 8 of CEPA 1999 have been published. Parties who may be required to prepare and implement environmental emergency plans will have to submit two declarations to the Minister the first stating that an environmental emergency plan has been prepared and is being implemented, and the second stating that the implementation of the environmental emergency plan has been completed. These declarations will be posted on the CEPA Registry where they will be available for public review.

Business Plan for the Environmental Emergencies Program:

After consultation with all stakeholders the implementation of the Environmental Emergencies Program Mandate Renewal is well underway. HQ/Regional Working Groups have been formed to implement each initiative identified in the business plan and the progress is being monitored. The current program activities are reviewed against mandated responsibilities and strategies are developed to take advantage of efficiencies and alternative service delivery opportunities.

The objective is to build capacity for the next five years to address gaps and vulnerabilities in the existing capacity to effectively deliver the program.

Emergency Simulation Drills

During the coverage period, two emergency simulation drills were held by the EPB – Quebec Region, together with the local intervention community (municipalities, industries, fire and police departments, etc.) and with government partners (Coast Guard, Transport Canada and Fisheries and Oceans). A drill took place in May 2000 with the Groupe Alliance 2000 on the hydrocarbon handling facilities of IMTT Company in Quebec City and the other one, in June 2000, with the Montreal Pipeline company in Boucherville.

Article 2(1)(c) - Environmental Education

Environment Canada has been engaged in a nation-wide consultation with environmental educators to determine how best to respond to the commitments made by Canada for Chapter 36 of Agenda 21: Promoting Education, Public Awareness and Training. Over 5000 Canadians have participated in this process and Environment Canada is leading in the drafting of a broad-based multi-stakeholder national framework on environmental education and sustainability, with a view to tabling action plans from all supporters at the 10th Anniversary of the Rio Summit to be held in Johannesburg in the fall of 2002.

The Biosphère

According to its mission, the Biosphère of Environment Canada essentially works at disseminating information and at educating people on the environment, water and ecosystems such as the St. Lawrence River and Great Lakes. In 2000, the Biosphère held the "Climate Warning!" exhibition aimed at making young and older people aware of global warming on our planet and of its consequences on our lives.

Article 2(1)(d) - Scientific Research and Technology Development

Canada, through the Environmental Technology Centre (ETC), undertook a variety of initiatives:

Federal —provincial National Air Pollution Surveillance (NAPS) Network for monitoring criteria pollutants SO_2, CO, NO_x, and O_3 and total suspended particulate matter was sustained. Data were also collected on other pollutants, including PM with aerodynamic diameter less than 10 microns (PM10) (using hi-volume, dichotomous, and real-time 'TEOM' samplers), PM2.5 (using dichotomous and real-time TEOM samplers), particulate lead, particulate sulphate, nitric oxide, and over 100 organic compounds and over 70 metals and ions.

Stack sampling in support of inventory development and strategic options planning was performed to evaluate greenhouse gas emissions from a variety of sources. The work involved measurement of: emissions from three active landfills in Calgary; gas flaring; waste incineration from "TeePee" burners in Newfoundland; mercury emissions; volatile organic compounds (VOC) from landfills; fine particulate emissions; polycyclic aromatic hydrocarbons (PAH) emissions from coal-fired power plants in Alberta; and priority pollutants from federal heating plants in the National Capital Region.

Landfill gas contains numerous aliphatic, aromatic and halogenated compounds. Volatile organic compounds (VOC), which are present in the order of a few hundred ppm, are major precursors for smog formation, while Freons are known ozone-depleting substances. The VOC also contain vinyl chloride and 1,3-butadiene, which are CEPA toxic substances. VOC data have been collected from landfills in western Canada (Calgary, Regina and Saskatoon), the Toronto area, eastern Ontario and the Montreal urban community. A database on emissions has been developed. Development work was undertaken and is still underway for sampling and analytical procedures for other organic compounds of interest such as aldehydes and ketones, sulphur species and mercury.

In support of the Toxic Substance Management Policy (TSMP) on virtual elimination of CEPA Track-1 substances, studies on the Level of Quantification (LOQ) for PCB in stack emissions, ash and landfill gas was completed and a report published. Two emission sources, an enclosed flare burning landfill gas and a bio-medical incinerator, were used to collect the stack samples. The PCB LOQ included the co-planar isomers. The LOQ for hexachlobutadiene (HCBD) was also determined and reported. A study of the LOQ for five (tetra and penta) chorobenzenes is ongoing, and a screening run was conducted to determine the suitability of a combustion sources for the determination of the LOQ.

The effectiveness of flares, engines, turbines and boilers for the destruction of non-methane components of landfill gas was assessed. The study included measurement of VOC and other toxic substances such as polycyclic aromatic hydrocarbons (PAH) and polychlorinated dibenzo dioxins and furans (PCDD/F). Other pollutants of interest include particulate matter, hydrogen chloride, hydrogen fluoride, oxides of nitrogen, sulphur dioxide, and carbon monoxide. Measurements were earlier completed at two sites – an 800-kW reciprocating engine in Montreal and a 30-MW boiler in Toronto. Two additional sources were completed this fiscal year – a 900-kW engine in Waterloo and an enclosed flare in the Ottawa-Carleton Region. Some preliminary testing was conducted on a micro-turbine burning landfill gas.

The ETC is providing technical support to CanAmera Foods, a MAP™ (Microwave-Assisted Process) licensee and the world's largest canola oil manufacturer and Canada's leading oilseed processing company. BC Research, which also became a MAP™ licensee during the year is supporting the work. The work is aimed at demonstrating the potential use of MAP™ as a low-GHG emitting, "clean" industrial process. The project also aims at providing a substitute to the solvent hexane for canola oil production, which is a GHG contributor.

Laboratory testing was undertaken for a number of collaborative projects that will lead to reductions in emissions of GHG (primarily CO_2 and methane) from mobile sources. This work included the second year of the PERD-sponsored cold-start efficiency program, which resulted in the evaluation of a number of technologies designed to reduce cold-start fuel consumption by 10%. Alternative power sources as a Georgetown-University-developed urban bus powered by a fuel cell and a gasoline-electric Toyota Prius were tested over normal operational cycles to determine the energy efficiency and GHG reductions. A fuel emulsion of 20% water and 80% diesel was investigated for potential GHG, oxides of nitrogen (NOx) and particulate matter (PM) reductions from medium-speed diesel engines. The results using an International Standards Organisation (ISO) marine engine test indicated the potential for 30% reductions in the regulated exhaust emissions and an average reduction of 10% for CO_2.

Research continued on a PERD-sponsored university/government collaborative project to determine the concentration, composition and sources of airborne carbonaceous particles in

Canada. Partners included Natural Resources Canada (NRCan), Health Canada, National Research Council, Meteorological Service of Canada, and the ETC. This year, the Panel on Energy Research and Development (PERD) accepted the plan for a further four years of funding. The project is now applying the tools developed to generate the knowledge required to evaluate possible fuel and transportation standards and/or codes that may be needed to meet future particulate matter (PM) air quality objectives in Canada. The ETC is conducting the exhaust emissions measurements from transportation sources, and coordinating the analytical method development needed for chemical characterisation of particulate matter emitted from sources and in ambient air. Detailed emissions measurements of a number of advanced technology vehicles (gasoline direct-injection technology and advanced light-duty diesel vehicles) were made in an effort to understand the potential environmental benefits of these fuel-efficient vehicles. Emissions measurements designed to validate sampling and analytical methodologies were also undertaken. New particle-size-distribution-measurement and particle-counting instruments were commissioned and employed.

The state-of-the-art Scanning Laser Environmental Airborne Fluorosensor (SLEAF) prototype sensor was installed in the DC-3 aircraft and de-bugging largely completed on the unit. Specific software and hardware was developed. The earlier-generation Laser Environmental Airborne Fluorosensor (LEAF) was modified to make it available as a backup.

A final report on the first phase of evaluation of potential innovative processes applicable to the Sydney Tar Ponds (STP) was completed, using bench-scale testing on samples from the site. A number of technologies were investigated to determine their effectiveness at targeting and removing selected contaminants from the samples. Technologies were chosen based upon their previous performance at treating similar contamination, in addition to a few novel technologies that have shown promising bench-scale results.

A comprehensive report on applying and interpreting toxicity testing data was finalized and published. The guidance document is relevant to seven Environment Canada programs that use toxicity tests for assessing impacts and regulatory compliance (i.e., CEPA New Substances, CEPA Priority Substances, Ocean Disposal Permitting & Monitoring, Environmental Assessment, Contaminated Sites, Environmental Effects Monitoring, and Environmental Choice).

In a joint program with NRCan, the ETC designed and conducted a testing program to establish the best practices for light-duty vehicle idling, and cold and hot starting for reducing CO_2 emissions. The work was conducted in both cold and warm ambient conditions. Additional work is planned for heavy-duty vehicles.

As part of a multi-year collaborative R&D program with Transport Canada and the marine industry, the ETC participated in the exhaust emissions measurement of a medium-speed marine diesel engine that powers the Cabot, a Ro-Ro vessel owned by Oceanex. This is the first stage of a development program to design, fabricate and implement a computer-controlled water injection system to reduce exhaust emissions from this type of heavy-duty engine application.

Flaring is widely employed in Alberta to manage the disposal of waste hydrocarbon products from the oil and natural gas industries. Some of these flares have been identified as sources of odour, smoke and air-quality-related health concerns with local residents. In cooperation with NRCan's Energy Technology Centre, screening studies were performed at the Flare Test

Facility to determine the test parameters for the speciation of flaring emissions. The flare tunnel was designed to simulate the real-world conditions of cross winds under various fuel compositions.

In a joint program with New York State's Office of Research on Heavy Duty Engine Emissions, the ETC participated in a complete characterization of the exhaust stream from a small fleet of New York City urban buses. New York State scientists set up their fine particulate characterization instrumentation at the ETC laboratory for a detailed analysis of particulate sizing and distribution. At the same time, the ETC collected gaseous sample for VOC, carbonyls, PAH/n-PAH (nitro-PAH), semi-VOC, and specific target compounds. The sampling and analysis was conducted on four buses with and without a Continuous Regenerative Technology (particulate filter) manufactured by Johnson-Matthey.

The ETC provided exhaust emissions field-testing expertise and unique prototype instruments in a collaborative project with the City of Houston and United States Environmental Protection Agency (US-EPA) to develop a test methodology for conducting emissions testing of off-road vehicles. A general test procedure was developed to measure the exhaust emissions from off-road vehicles while the vehicles were operated under normal in-service conditions. With this procedure, a fleet of 27 different vehicles was tested for emissions. The fleet included fire trucks while pumping water, Gradalls digging ditches, large industrial lawnmowers, street sweepers, and vacuum trucks.

The Great Lakes Bi-national Toxics Strategy (BNS) is a collaborative process by which the Ontario Region of Environment Canada, the US-EPA, and various other stakeholders work towards the goal of virtual elimination of targeted persistent bioaccumulative toxic substances (PBTS) resulting from human activities in the Great Lakes Basin. The primary emphasis of the BNS is to achieve toxic reductions via pollution prevention and other voluntary initiatives. Emission measurements for various PBTS are being undertaken at Ontario industrial facilities under the Great Lakes BNS. The first facility tested under this program was the Hospital for Sick Children in Toronto, where the ETC conducted source testing for various target compounds. These pollutants included PM, metals, PCDD/F, PAH), hexachlorobenzene (HCB), octachlorostyrene (OCS), and VOC. A preliminary survey was also completed at a base metal smelter in Timmins Ontario. Testing on this facility will be completed in the next fiscal year.

Residential wood combustion has been identified as a major source of PCDD/F in the atmosphere. In order to develop a sound reduction strategy, it is necessary to establish the difference in PCDD/F emissions from conventional and certified advanced-combustion stoves. The results of this work are needed to guide to the Canada Wide Standards (CWS) process and to update emissions factors used in calculating air emissions nationally. The testing program was a joint effort between a number of federal and provincial government organizations and industry stakeholders. The main participants included the ETC, the CWS Development Committee, Intertek Testing Services NA Ltd., and the Hearth Products Association of Canada. In addition to PCDD/F, samples of flue gas were collected and analyzed for PAH, VOC, and PM. The final report was released in Feb 2001 and will be posted on the Green Lane.

Both PCDD/F and HCB are Track-1 substances slated for virtual elimination. Industrial sectors/activities identified for the potential development of control options include base metal smelters, electric arc furnaces and sinter plants in the steel manufacturing industry. Since there are no North American stack-testing data for these sources, the Stakeholder Consultation

(Strategic Options) Report for the Steel Manufacturing Sector recommended that source testing of representative Canadian operations be performed. In cooperation with the Minerals & Metals (2M) Division of the National Office of Pollution Prevention, the ETC measured emissions from the electric arc furnace at Gerdau Courtice Steel in Cambridge, Ontario. This program also investigated the effects of evaporative cooling on PCDD/F levels at the exit of the bag-house. These results are used to support the PCDD/F inventory for electric arc furnaces and setting Canada-wide Standards. Reviews were conducted of the independent sampling conducted at IPSCO in Regina and Alta Steel in Edmonton. A review was also conducted of US PCDD/F data from sintering plants and electric arc furnaces. A presentation was made at the 2000 National Consultation Workshop on the Development of Environmental Performance Standards for the Steel Sector. Discussions were undertaken with the 2M Division to identify future ETC support for the measurement of Track-1 substances from base metal smelters in Canada.

Research work was conducted on water-in-oil emulsion ('chocolate mousse') formation mechanisms. The work focused on the large-scale formation of emulsions including tank tests at the US federal OHMSETT facility in New Jersey. The emulsion formed after the ERIKA spill in France was studied and confirmed the formation mechanisms noted in the laboratory. Some work on the kinetics of emulsion formation was also completed. The data was entered into the Oil Properties database. Four research papers on this work were published in the international AMOP Technical Seminar proceedings or other international oil spill conference proceedings.

Tests have been developed to evaluate the performance of biodegradation agents (both fertilisers and organisms), emulsion-breakers, and emulsion-preventers. The biodegradation tests for both salt and fresh water were finalised and are now broadly accepted. Dispersant research focused on quantifying the performance of several new dispersant formulations entering the market. The test procedure used to measure the laboratory effectiveness of oil spill dispersants became the American Society for Testing & Materials (ASTM) standard procedure. This was by request of the ASTM Committee on Oil Spills.

This new second edition was published of the popular Shoreline Cleanup Assessment Teams (SCAT) manual. It incorporates the experience of recent spill usage, contains new information, and was developed in consultation with the US National Oceanic & Atmospheric Administration, the Texas Government Land Office, and the California Oil Spill Preparedness & Response organisation to enhance uniformity and compatibility where modifications had occurred due to agency-specific adaptations.

The scientific results on the levels of substances like CO_2, Volatile Organic Compounds (VOC), particulate matter (PM), and carbonyls, in the emissions and residues from meso-scale oil-burn experiments were published. A handbook on *in-situ* burning of oil spills was also published.

In collaboration with the US Minerals Management Service (USMMS), and sorbent manufacturers and distributors, the performance of a variety of commercial oil sorbents was tested and the results posted in a Sorbents Database on the ETC web site. In addition, in partnership with the Canadian Coast Guard (CCG), some specialised countermeasures equipment for pumping of heavy oils (annular water injection in 4- & 6-inch hoses) was also tested. Progress continued within the American Society for Testing & Materials (ASTM) forum on the development of protocols for testing sorbents for chemical spills and for the performance-based evaluation of hazardous material and marine spill countermeasures equipment. A state-of-the-art review was completed on containment and recovery equipment

used in fast-flowing waters. Additionally, a review and summary report were completed on marine oil/water separator systems.

A report was produced to summarize available spill countermeasure technologies and technology gaps for treating soil contamination caused by six selected CEPA toxics (arsenic, cadmium, chromium, benzene, benzidine, and creosote).

Various technology information transfer steps were taken to promote the increased use in Canada of the 'green' MAP™ liquid-phase extraction Reference Method for organic compounds in a variety of matrices that has also been validated and approved by the US Environmental Protection Agency. Commercial equipment capable of performing the method is available through MAP licensees. The Reference Method is environmentally friendly and requires low solvent consumption (~90% volume reduction) and reduced energy usage (~99% reduction).

In the year 2000, Environment Canada (Quebec Region) implemented pollution prevention programs in areas of national interest such as textiles, aircraft maintenance and dry cleaning. Two Enviroclubs (20 small- and medium-size companies) were initiated. In order to support the performance of these clubs, the EPB – Quebec Region, issued a coaching guide to identify and carry out pollution prevention projects within companies. In 2000 the Quebec Region continued measuring the presence of atmospheric mercury in the air and precipitation on the Saint-Anicet and Mingan sites. The Quebec Region also pursued its studies of lindane in corn crops. Representatives from the region joined a group of national experts to pursue this research and to improve their knowledge about the pesticide atmospheric life cycle.

Article 2(1)(e) - Environmental Impact Assessment

The Canadian Environmental Assessment Agency (CEAA) is responsible for administering the federal environmental assessment process. In the 2000 fiscal year, federal departments and agencies reported a total of 6,138 screenings and 8 comprehensive studies, in accordance with their environmental obligations under the *Canadian Environmental Assessment Act*. During the same time period, CEAA managed one panel review.

Article 2(1)(f) - Economic Instruments

The federal government has been taking action in the past few years to provide incentives for sustainability. Among these is the Ecological Gifts Program (1995) which improved the capital gains taxation of lands donated to conservation. The government has since made changes that provide preferential tax treatment to firms using energy-efficient equipment and equipment for the production and distribution of heat. They have also improved the tax treatment of rail assets to make this relatively energy-efficient mode of transport more competitive with trucking.

In December 2000, Environment Canada also sponsored, with the OECD, an international conference in Vancouver to share knowledge and experience on the application of economic incentives for environmental purposes. Environment Canada continues to work with other Departments, specifically the Department of Finance, on the exploration and development of potential applications of such instruments.

With respect to climate change issues, Canada's National Climate Change Process explored the use of economic instruments for greenhouse gas abatement. The Tradeable Permit

Working Group published its report on the potential use of permit trading to reach a national emission target. Ministers of the environment and energy supported the creation of several federal/provincial/territorial working groups to inform them on key aspects of a national strategy to reduce greenhouse gases. These working groups include domestic emissions trading in their work plan as well as in-depth economic modeling of the potential benefits of emission trading.

In addition, the Government of Canada is exploring emissions trading in ongoing Canada-U.S. Air Quality Agreement discussions. The Ozone Annex to the agreement opens the door to transboundary trading for NOx emissions. In the context of the Ozone Annex, Canadian and U.S. officials have met to discuss transboundary trading and follow-up meetings are expected.

ARTICLE 3 - LEVELS OF PROTECTION

Species at Risk Legislation

The federal government introduced Bill C-33, the Species at Risk Act (SARA), in the House of Commons on April 11, 2000. Bill C-33 was envisioned as part of Canada's three-part strategy to protect species at risk, which includes stewardship programs and the Accord for the Protection of Species at Risk, as well as federal legislation.

The proposed SARA would cover all wildlife species at risk and their critical habitats, and apply to all lands in Canada. The Bill set out a rigorous, independent scientific process to assess species and provided the Government of Canada with the mechanisms and powers to mandate plans for species recovery. Bill C-33 would be complemented by a stewardship program to empower Canadians to take actions to protect habitat, and by the Accord for the Protection of Species at Risk that unifies the efforts of the provinces, territories and the federal government on this issue. This approach was designed to use incentives as the preferred way of protecting critical habitat, but would be backed up with strong prohibitions when necessary. Budget 2000 allocated $180 million over five years to implement the federal strategy. One quarter of these resources will be invested in stewardship activities across the country.

Bill C-33 died on the Order Paper at the dissolution of Parliament when an election was called for November, 2000. However, the Government planned to re-introduce species at risk legislation.

Additions to the List of Toxic Substances

On June 10, 2000, the following substances were proposed to be added to the List of Toxic Substances (Schedule 1) of CEPA 1999.

Acetaldehyde
1,3-Butadiene
Acrylonitrile
Respirable particulate matter less than or equal to10 microns
Acrolein

In addition, Bromochloromethane, that has the molecular formula CH_2BrCl, was proposed for addition to the List of Toxic Substances of CEPA 1999 on June 2, 2000.

NOx and VOCs

In December 2000, Canada and the United States signed the Ozone Annex to the Canada-United States Air Quality Agreement. This agreement commits the two countries to take action to reduce the emissions and transboundary flow of nitrogen oxides (NOx) and volatile organic compounds (VOCs). Both countries will report every two years on progress in reaching their targets and will, in 2004, revisit the agreement to see if further reductions are required.

ARTICLE 4 - PUBLICATION

The following notices were published in *Canada Gazette*, Part I during 2000:

- Agreements Respecting Canada-Wide Standards for Benzene - Phase I, for Particulate Matter (PM) and Ozone, and for Mercury, in which jurisdictions agreed to meet reduction targets for ambient concentrations of these substances by 2010;
- Agreement Respecting Canada-Wide Standards for Dioxins and Furans, Mercury in Dental Amalgams, Mercury-containing Lamps, and Petroleum Hydrocarbons in soil; and,
- Notice of intent to recommend that Precursors to Respirable Particulate Matter Less than or Equal to 10 Microns (sulphur dioxide, nitrogen oxides, ammonia and volatile organic compounds) be added to the List of Toxic Substances in Schedule 1 to the Canadian Environmental Protection Act, 1999.

ARTICLE 5 - GOVERNMENT ENFORCEMENT ACTION

The majority of the provisions of the *Canadian Environmental Protection Act, 1999* (CEPA, 1999) came into force on March 31, 2000. The sections related to "environmental protection compliance orders" (EPCOs) would not come into force until March 31, 2001. EPCOs are similar to "stop orders" and "cease and desist orders" available under environmental statutes of Canada's provinces as well as under the environmental laws of other nations. Persons subject to EPCOs and ordered to return to compliance under such an order, are allowed to request review of the EPCO by a review officer. The Minister of Environment is required to appoint a roster of review officers and select one of them as the Chief Review Officer. This remains to be done, and the Minister is seeking qualified candidates for these positions.

From an enforcement point of view, the most important aspects of CEPA, 1999 are:

1. the obligation imposed by Parliament on the Government of Canada to enforce the Act in a fair, predictable and consistent manner;

2. the obligation similarly imposed by Parliament on the Government of Canada to implement the precautionary principle in all aspects of its administration of the Act;

3. the granting of all the powers of a peace officer to CEPA enforcement officers;

4. the setting out of powers for analysts under the Act, giving them the authority to enter any place when accompanied by an enforcement officer, to take samples, to conduct tests and measures, and to examine data and documents. Analysts can be laboratory personnel, accountants (including those trained in forensic accounting), engineers, chemists, biologists and other environmental specialists who can bring their expertise to compliance verification and investigations;

5. the expansion of definitions such as that for "place" which leads to an expanded power of entry for enforcement officers and analysts;

6. inclusion of inspection warrants for abandoned premises or premises where an enforcement officer and/or an analyst has been refused entry;

7. the power given to enforcement officers to stop conveyances, such as trucks, trains, planes and ships, for inspection purposes;

8. expansion of the enforcement officer's power to direct remedial measures, to deal not only with alleged illegal releases of toxic substances and discharges by federal facilities as under the previous CEPA, but also alleged illegal discharges of regulated substances in the context of international air pollution, international water pollution and environmental emergencies;

9. the provision of two new enforcement tools, including EPCOs (discussed above) and "environmental protection alternative measures", which, like similar alternative measures for adult offenders under Canada's *Criminal Code* and under the federal *Young Offenders Act*, allow negotiation of a compliance agreement once charges have been laid and with the requirement to register the agreement in court as a public document;

10. the obligation for directors, officers and executives of corporations to ensure compliance with CEPA, 1999 and its regulations – an obligation often referred to as a "duty of care";

11. expanded subject matter for court orders; and,

12. guidelines to assist the courts in imposing sentences for CEPA, 1999 offences.

It has been the policy of the federal Department of Justice that all federal departments publish compliance and enforcement policies that set out how they will administer the laws for which they are responsible. As was done for the previous *Canadian Environmental Protection Act* in force from 1988 to March 2000, Environment Canada prepared a Compliance and Enforcement Policy. The policy contains guiding principles including the following:

- Compliance with the Act and its regulations is mandatory;

- Enforcement officers will apply the Act in a manner that is fair, predictable and consistent. They will use rules, sanctions and processes securely founded in law;

- Enforcement officers will administer the Act with an emphasis on prevention of damage to the environment;

- Enforcement officers will examine every suspected violation of which they have knowledge, and will take action consistent with the Compliance and Enforcement Policy; and,

- Enforcement officers will encourage the reporting of suspected violations of the Act.

The policy strikes a balance between the promotion of compliance and enforcement activity. In addition, the chapter on "Measures to Promote Compliance" specifies the compliance promotion role of Environment Canada engineers and environmental scientists. The

compliance promotion role for enforcement officers is necessarily more limited, in order that action by enforcement officers, including the inspections and investigations that an officer may carry out as well as the measures available to officers to enforce the law and restore compliance, do not conflict with the technical role of Environment Canada scientists and engineers.

The document also contains a discussion of the new enforcement powers under CEPA, 1999 and how enforcement officers will use them. It sets out the factors that an enforcement officer must consider when choosing an action after investigation and confirmation of a violation of the Act or one of its regulations.

In May 2000, the Compliance and Enforcement Policy for CEPA, 1999 was published on the CEPA Environmental Registry, followed by a sixty day comment period which ended on July 28, 2000. The final text will be published both on the registry and in paper form within the first quarter of calendar year 2001.

Environment Canada's National Enforcement Program: Action Plan

Fisheries Act

A new *Compliance and Enforcement Policy* for the Habitat Protection and Pollution Prevention Provisions of the *Fisheries Act* is being finalized, and the document, in draft form, will be available for public consultation in the near future. This policy was developed jointly by Environment Canada and the Department of Fisheries and Oceans over an eleven year period. Its purpose is to ensure consistency in the application of the pollution prevention provisions of the *Fisheries Act* by both Environment Canada and the Department of Fisheries and Oceans. The draft document incorporates guiding principles similar to those in the Compliance and Enforcement Policy for CEPA, 1999, in the context of an Act respecting the protection and conservation of fish, fish habitat and human use of fish. The draft policy must be approved first by the Deputy Minister of Environment Canada and the Department of Fisheries and Oceans. There will then be a sixty day period for public comment. It is anticipated that these steps will be completed and the policy in effect during calendar year 2001.

Compliance and Enforcement

For those involved in law enforcement programs, the goal is compliance, and in 2000, Environment Canada (EC) continued to promote compliance with legislation by providing information in printed form and on the Internet, at seminars, conferences, meetings with the regulated community, bulletins and other publications for specific audiences and publication of the names of those found guilty by the courts.

The monitoring of compliance by the federal, provincial and territorial governments is aided by regulatory requirements to submit information, permits, licenses and other authorizations that are required for many activities, such as the transboundary movement of hazardous wastes, ocean disposal, international trade in endangered species, hunting and trapping, and activities that pose a risk of releasing toxic substances and contaminants into the environment. For example, in fiscal year 99/00, Environment Canada processed 6,220 notices for proposed international shipment of hazardous wastes and 44,059 manifests associated with actual shipments. Approximately 99% of these are between the United States and Canada.

Licences, Permits and Authorizations

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) to which more than 130 countries are signatories, helps to control the international trade in endangered and protected species.

The following table summarizes the CITES permits that were issued in Canada during 2000.

CITES Permits issued in Canada during 2000

Jurisdiction	Import	Export	Temporary Export/import	Scientific
Canada	188	7135	216	36
Alberta[1]		NA		
British Columbia		1867		
Manitoba		1218		
New Brunswick		403		
Newfoundland		92		
NWT		110		
Nova Scotia		34		
Ontario		932		
PEI		1		
Quebec		1038		
Saskatchewan[2]		649		
Yukon		254		
Nunavut		2		
TOTAL	**188**	**13735**		**36**
Appendix I species included on permit				

[1]Alberta does not issue CITES export permits.
Source: CITES Office, Canadian Wildlife Service

Training

Environment Canada has specialized training courses for their respective enforcement staffs. Courses are specifically designed to accommodate needs as they emerge as a result of variables such as changing priorities, or new or updated legislation and regulations.

In order for EC enforcement officers to employ new authorities and enforcement tools under CEPA, 1999 in a way that ensures their safety as well as the safety of the public, training was provided to enforcement managers and staff in several areas, including:

- Applied Peace Officer Sciences
- Enforcement Officer Safety and Defensive Tactics
- Driver Training and Vehicle Safety

During 2000, approximately 200 staff members received enforcement- related training in the following courses:

- General Enforcement Training (GET) for CEPA enforcement officers;
- *Wild Animal and Plant Protection and Regulation of International and Inter-provincial Trade Act (WAPPRIITA)* Course for Environment Canada wildlife enforcement officers;
- *WAPPRIITA* Course for Customs Officers (Ontario);
- Negotiations Skills Training Course for CEPA enforcement officers;
- Annual Firearms Training for Wildlife Officers;
- Forensic Interviewing Course;
- Safe Boat Handling Course;
- World Customs Organizations CITES training course;
- Migratory Bird Enforcement and Waterfowl Identification (Prairie and Northern Region);
- Storage of PCB Material Regulations (under CEPA, 1999);
- (9mm) Firearms Conversion Course for wildlife officers;
- Metal Mining Liquid Effluent Regulations (under the *Fisheries Act*);
- Ocean Disposal Regulations (under CEPA, 1999); and,
- NEMISIS (computer-based information recording and management system for enforcement data)

Inspections

On-site and off-site inspections which involve the verification of obligatory information, submitted to the Minister of Environment by regulatees, are undertaken to confirm compliance with regulations. Investigations are normally carried out when non-compliant situations are discovered. Each year, the Enforcement Branch of Environment Canada and the five regional offices prepare an inspection plan that targets specific priority regulations. Such a plan is formulated using criteria that includes: the number and types of targeted populations or activities; the profiles, compliance histories, operational complexity and capacities of the target companies; the environmental significance and geographic scale of their operations; and the nature of the applicable regulatory provisions.

Among the inspections which took place over the course of 2000, approximately 2,143 were conducted by EC's wildlife inspection staff under the federal WAPPRIITA, (which implements Canada's commitment to the Convention on International Trade in Endangered Species (CITES)). In 2000, EC's environmental protection inspection staff conducted 2,027 inspections under CEPA, 1999 , and 1525 under the *Fisheries Act* during the same period.

Information Management and Reporting

There is a legislated requirement for Environment Canada to report to Parliament annually on the implementation of the *Canadian Environmental Protection Act* (CEPA) and the *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act* (*WAPPRITTA*). EC also contributes to the Department of Fisheries and Oceans Annual Report to Parliament on the *Fisheries Act*. The 99/00 fiscal year report is available at <http://www.dfo-mpo.gc.ca/habitat/annrep97/english/index_e.htm >.

The *CEPA* Environmental Registry, established under *CEPA*,1999, stores materials noted in the list below. These are available to the public at http://www.ec.gc.ca/CEPARegistry/default.cfm.

- Enforcement and Compliance Policy for CEPA, 1999
- Notices published under CEPA, 1999 in the *Canada Gazette*
- Annual Reports on the administration and enforcement of the Act, including a description of research carried out under CEPA, 1999
- CEC Annual Reports on Enforcement (when they deal with CEPA, 1999 issues)
- Historical court decisions on guilty parties
- Press releases and media advisories
- The complete legislative text of CEPA, 1999 and its regulations
- Brief "plain language" summaries of CEPA, 1999 regulations
- Enforcement activities reports and enforcement statistics
- Compliance Reports related to CEPA, 1999 regulations
- International Conventions/Accords that Canada has signed and are implemented in Canada by means of CEPA , 1999 and its regulations. (e.g. The Basel Convention on the transboundary movement of hazardous wastes, The London Convention on the disposal of wastes at sea)
- Proposed new regulations under CEPA, 1999 and the amendment of existing regulations
- Substances Lists, including the Toxic Substances List, the Domestic Substances List, the Export Control List, and the Priority Substances List

Enforcement of environmental and wildlife legislation for all parties is conducted within the context of the overall Canadian legal framework, which includes the *Canadian Charter of Rights and Freedoms*, the *Criminal Code*, the *Privacy Act*, *Access to Information Act*, *Mutual Legal Assistance Act*, and the *Canada Evidence Act*. Most federal, provincial and territorial environmental and wildlife legislation provides for the authority to search, seize and detain under the rules established by legislation. In Quebec, their provincial *Charter of Rights and Freedoms*, *Civil Code* and *Penal Code* are in effect as well.

2000 Enforcement Information/Statistics

Environment Canada Enforcement Information.

Enforcement information, reports and statistics can be found on EC's web site at < http://www.ec.gc.ca/enforce/homepage/english/index.htm> .

ARTICLE 6 - PRIVATE ACCESS TO REMEDIES

Persons with a recognized legal interest have access to remedies before administrative tribunals and the courts. Interested persons, in addition to being able to institute private prosecutions, may also put forth to a competent authority, a request to investigate alleged violations of environmental laws and regulations.

For example, CEPA, 1999 provides statutory authority for a person to apply to the Minister of the Environment for an investigation concerning any alleged offence under that Act. As well, persons with a recognized legal interest in a particular matter have access to administrative, quasi-judicial and judicial proceedings for the enforcement of Canada's environmental laws and regulations. In this regard, CEPA, 1999 has introduced the concept of "environmental protection actions" which allow any person to seek a court order prohibiting a continued violation of the statute and/or to mitigate harm caused by a violation of the statute. As well, CEPA, 1999 provides the statutory authority to request the review of administrative decisions or proposed regulations.

In Quebec, the complaint desk of the Department of the Environment received 85 complaints in 2000, among which 10 were related with service quality and 75 dealt with the environment.

ARTICLE 7 - PROCEDURAL GUARANTEES

Canada has administrative, quasi-judicial and judicial proceedings available for the enforcement of environmental laws and regulations. Both the *Canadian Charter of Rights and Freedoms* and the courts have ensured that persons are given an opportunity, consistent with the rules of procedural fairness and natural justice, to make representations to support or defend their respective positions and to present information or evidence. Decisions are provided in writing, are made available without undue delay, and are based on information or evidence on which the parties were offered the opportunity to be heard. In accordance with its laws, Canada provides parties to such proceedings, as appropriate, the right to seek review and where warranted, correction of final decisions by impartial and independent tribunals. An example of fair, open and equitable proceedings at the administrative level is the Board of Review process available under CEPA,1999.

THE CHILEAN REPORT

This section addresses the actions undertaken by Chile to comply with its commitments under the Canada-Chile Agreement on Environmental Co-operation, including environmental enforcement activities.

GENERAL COMMITMENTS UNDER THE AGREEMENT

Article 2 of the Canada-Chile Agreement on Environmental Cooperation defines the general commitments as follows: a) periodically prepare and make publicly available reports on the state of the environment; b) develop and review environmental emergency preparedness measures; c) promote education in environmental matters, including environmental law; d) further scientific research and technology development in respect of environmental matters; e) assess, as appropriate, environmental impacts; and f) promote the use of economic instruments for the efficient achievement of environmental goals.

- The objective of the *Sistema Nacional de Información Ambiental* (SINIA) [National Environmental Information System], which has been operating via the Internet since April 1999, is to allow for fast and timely contact between the public and the institutions that generate environmental information. The system was established in compliance with article 70(d) of Law 19.300 which requires CONAMA to ensure that the National Environmental Information System is kept public and broken down by region.

  SINIA currently conducts its activities via a Web site (**www.sinia.cl**). The site serves as a search engine that puts people seeking environmental information in contact with the public and private institutions that provide such information. The system provides support for environmental management as well as decision-making at the sectoral and regional levels.

Over 30 public environmental institutions are actively involved in this project, including departments in the ministries of agriculture, public lands, defence, finance, education, internal affairs, mining, public works, planning and cooperation, health, and transport and telecommunications.

SINIA has also increased the number of participating companies. It has registered over five hundred national companies and institutions in the environmental industry; it has more than 3,200 links to Web sites and an average of approximately 4,500 hits per month.

At the regional level, SINIA has modules that are operating fully in the thirteen regions and the country as a whole. The modules enable people to search for regional documents generated using local information.

- The following are the two main achievements in the area of natural resources in 2000. At the beginning of this year, a draft copy of the *Política para el Uso Sustentable del Patrimonio Natural Renovable* (PNR) [Policy on the Sustainable Use of the Renewable Natural Resources] was published. CONAMA's Council of Ministers created an interdepartmental committee to include guidelines that would make it possible to address critical issues regarding the management of the PNR in the draft Policy. CONAMA's Council of Ministers approved a working plan to address financial and other aspects of the proposal.

  The second achievement was the launch of the "*Sendero de Chile*" [Chilean Path] project aimed at creating a precordilleran route linking the northern and southern parts of the country. The path will be built with soil and will be 1.20 metres wide. In 2000, this project was managed by a national directorate and by regional directorates made up of members from both the private and public sectors.

- The State is responsible for the challenging task of ensuring public participation in environmental management. Law 19.300, which deals with environmental issues, stipulates various methods in which the State must facilitate public participation and promote educational campaigns to protect the environment. It also provide the public with equal opportunities for participation.

  The government's environmental policy indicates that a legitimate, transparent and socially acceptable method of environmental management can only be possible if the interests and concerns of the local community, academics, NGOs, those affected, opinion groups, workers, the manufacturing industry and organized citizenship are consistent. Participation brings to light the valid differences among the parties and seeks to reach environmental agreements and consensuses.

  The *Departamento de Participación Ciudadana y Educación Ambiental* [Department of Citizens' Participation and Environmental Education] used these general guidelines to carry out activities in three major areas in 2000:

  Environmental education in the school system: The aim of this activity was to introduce environmental issues into the key educational areas by promoting behaviours and practices that will help preserve, protect and improve the environment.

Strengthening social stakeholders: The aim here was to increase capabilities and strengthen the presence of civil society organizations that add momentum to environmental management, and;

Citizen participation in environmental management policies and instruments: The objective was to establish the conditions and spaces needed to involve communities and organizations in the development, implementation and follow-up of environmental policies and management tools.

- Created under Executive Order Nº 90, June 5, 1998, issued by the Ministry Secretary-General of the Presidency, the *Consejo Nacional para el Desarrollo Sustentable* [National Council for Sustainable Development] came into existence in Chile on April 23, 1999. The Council is the assessment agency for the President of the Republic. It is made up of 92 industry leaders from the public and private sectors. The primary role of the Council is to submit proposals for implementing and monitoring sustainable development in Chile. Its aim is to ensure that the country's various social groups play a role in decision-making on sustainable development and environmental protection. The Chair of the Council is the Minister and Secretary-General of the Office of the President as well as Chairman of the Board of Directors of CONAMA, and the Executive Secretary is Executive Director of CONAMA. In creating the Council, the Government of Chile joined the ranks of the over 140 countries which already have such bodies. This brings Chile into compliance with major environmental commitments undertaken in Rio de Janeiro in 1992.

  In June 2000, the Council for Sustainable Development held its second annual meeting during which members reviewed thematic proposals submitted by the *Comité de Apoyo Técnico* [technical support committee] on issues such as values, culture and education for sustainability; indicators for sustainable development, rules for environmental policies on natural resources, as well as institutionality and legislative agenda.

- The *Sistema de Evaluación de Impacto Ambiental* (SEIA) [Environmental Impact Assessment Board] continued full-scale operations. Its mandate is to include an environmental aspect into project planning and performance in both public and private sectors in Chile. It seeks to ensure that all projects are environmentally sound. In 2000, 875 projects for investment or economic activity throughout the country were submitted to the Board (a 4% increase over 1999). Of these, 55 were *Estudios de Impacto Ambiental* (EIA) [environmental impact studies] and 820 were *Declaraciones de Impacto Ambiental* (DIA) [environmental impact statements], representing a total investment of $5,445 million.

  With respect to environmental assessment in the Antarctic, in 2000, CONAMA, in conjunction with other public institutions, evaluated and approved 13 projects submitted for environmental assessment in the Antarctic, thereby complying with the Madrid Protocol to the Antarctic Treaty. In addition, CONAMA conducted on-site inspections of four projects being carried out on the continent.

- In 2000, CONAMA's *Unidad de Economía Ambiental* [Environmental Economics Unit] carried out activities in the following areas:
  - Economic and social impact of clean-up plans and environmental standards.
  - Tradable emission permits: in 2000, a study entitled "*Desarrollo de una nueva propuesta de sistema y ley para el sistema de permisos de emisión transables*" [development of a new proposal for a system and law in respect of tradable emission

permits], was conducted by the Universidad Católica and a group of lawyers, with the view to develop a new draft legislation for this environmental management tool.

- In May 2000, the office of the Undersecretary of the Ministry of the Economy created a task force to study the possibilities of effectively introducing economic instruments into the country's environmental management policy. CONAMA, through its Environmental Economics Unit, played an active role in the six-month project.
- Environmental and clean systems in the manufacturing industry. A study entitled "*Promoción e incentivo de la implementación de sistemas de gestión ambiental en empresas chilenas*" [promoting the implementation of environmental management systems among Chilean companies] was conducted in 2000. The aim of the study was to provide information on the implementation of environmental management systems in the country's manufacturing industry and to identify as well as propose new incentives that the State could introduce to encourage national manufacturing companies, especially the small and medium-sized ones, to adopt environmental management systems.
- National environmental budget: With respect to the calculation of public expenditure on environmental issues, estimates were prepared for the third year in 2000. These figures were used to calculate expenditure in 1999 and establish estimates for 2000 and 2001.
- Sustainable development indicators: In 2000, a series of sustainable development indicators were developed for the Bío-Bío, Aysén and Magallanes regions. In addition, a study was initiated to seek proposals for indicators for three new regions: Valparaíso, O'Higgins and Los Lagos.
- Environmental accounting for soil use: Soil use accounts are categorized under environmental accounting, which is aimed at finding the most detailed description possible of the links between economic activity and the natural environment, and, by extension, determining the impact that economic activities have on the environment. Awareness of the impact that economic activity has on the environment will help set guidelines for the development of policies and the planning of medium- and long-term strategies. In 2000, a pilot program on soil use accounting was developed for the Bío-Bío River region. This exercise demonstrated that soil use accounts, which include different types of information from various sources on spatial distribution of the uses and coverage of the territory, can provide fundamental support for territorial management and planning.

LEVELS OF PROTECTION AND PUBLICATION

In accordance with Article 3 of the Canada-Chile Agreement on Environmental Cooperation, each Party shall ensure that its laws and regulations provide for high levels of environmental protection and shall strive to continue to improve those laws and regulations. Article 4 stipulates that each Party shall ensure that its laws, regulations, procedures and administrative rulings of general application respecting any matter covered by this Agreement are promptly published or otherwise made available to interested persons and the other Party.

- CONAMA's key mission is to preserve and enhance the quality of the environment. In keeping with this environmental policy, CONAMA must therefore propose, facilitate and coordinate the pronouncement of environmental quality and emission standards. The first set of standards regulates concentration levels and timelines of maximum and minimum levels of permissible elements, compounds, substances, chemical and biological sub-products, energy, radiation, vibrations, noise or any other element whose presence or

absence may endanger the life or health of persons (primary environmental quality standard) or constitute a risk for the protection and conservation of the environment or the preservation of nature (secondary environmental quality standard). The second set of standards is intended to reduce the quantity of pollutants released, or generated, by a facility or emissions source so as to prevent environmental degradation and to rehabilitate polluted areas.

- In 2000, the following environmental standards were published in the *Diario Oficial* [Official Gazette]:

  - *Norma de Emisión para la Regulación de Contaminantes Asociados a las Descargas de Residuos Industriales Líquidos a Sistemas de Alcantarillado* [emission standard for regulating pollutants associated with the discharge of liquid industrial waste from sewer systems] amendment of Order no. 609, May 7, 1998 from the Ministry of Public Works and Executive Order Nº 3592, August 18, 2000 issued by the Ministry of Public Work, published in the September 26, 2000 issue of the Official Gazette. This amendment modified the deadline for compliance to enable manufacturing and sanitation companies to reach a consensus on treatment procedures for organic pollutants. Additions included a definition of the "*Sistema de Tratamiento de Aguas Servidas y Planta de Tratamiento de Aguas Servidas*" [treatment system for sewage and sewage treatment plants], which also incorporates underwater outlets.

  - *Norma de Emisión para Olores Molestos Asociados a la Fabricación de Pulpa Sulfatada* [emission standard for offensive odours associated with the manufacturing of sulphate pulp], Executive Order Nº 167 issued by the Ministry of the Secretary General of the Presidency on November 9, 1999 and published in the April 1, 2000 issue of the Official Gazette. The aim of this standard is to protect adjacent communities from the offensive odours emanating from this type of industry. It applies to the seven plants that use the Kraft process to manufacture cellulose and that are located between Regions VII and IX. It establishes a gradual compliance process for controlling emissions that produce offensive odours and stipulates limits for new plants being set up in the country.

  - *Norma de Emisión para Hidrocarburos no Metánicos (HCNM) para Vehículos Livianos y Medianos* [emission standard for non-methane hydrocarbons used in light and medium-sized vehicles]. Executive Order Nº 103, May 2, 2000 issued by the Ministry of Transportation and Telecommunications and published in the September 15, 2000 issue of the Official Gazette. The objective of this standard is to control the emission of non-methane hydrocarbons by light and medium-sized motorized vehicles that operate on compressed gas.

  - *Norma de Emisión para Motocicletas* [emission standard for motorcycles]. Executive Order Nº 104, May 2, 2000 issued by the Ministry of Transportation and Telecommunications and published in the September 15, 2000 issue of the Official Gazette. Its objective is to control and reduce the local and national emission levels of carbon monoxide (CO) and total hydrocarbons (THC) from this type of vehicle.

- A program was put in place to assess and monitor pollutants in order to monitor compliance with established standards. When a standard is violated, the Regional Environmental Commission (COREMA) asks for an Executive Order declaring the area to have higher-

than-acceptable concentrations of pollutants. CONAMA then prepares a clean-up plan for the area in question. The most noteworthy achievements of 2000 were:

- *Plan de Descontaminación de Chuquicamata* [Chuquicamata clean-up plan]: the project was redrafted and approved by CONAMA's Board of Directors under agreement N°160 of 2000.

- *Plan de Descontaminación de María Elena* [María Elena clean-up plan]: The María Elena and Pedro de Valdivia clean-up plan is currently being redrafted.

- *Planes de Descontaminación de las Fundiciones de la División El Teniente de CODELCO Chile (Caletones), de Potrerillos y Hernán Videla Lira* [clean-up plans for the foundries in the El Teniente region of CODELCO Chile (Caletones), Potrerillos and Hernán Videla Lira]. All three plans are currently being implemented. In 2000, the three plans complied with the objectives of the emission reduction schedule.

GOVERNMENT ENVIRONMENTAL ENFORCEMENT ACTION

Article 5 of the Agreement on Environmental Cooperation establishes government enforcement measures and stipulates that in order to comply with its environmental laws and regulations, each Party shall effectively enforce its environmental laws and regulations through appropriate governmental action.

- In Chile, environmental enforcement is undertaken by various public agencies, an approach which favours sector-based enforcement. In recent years, it has become apparent that there is a need for a systematic, overall co-ordination of the enforcement process. New procedures for developing standards and plans, as well as the existence of the Environmental Impact Assessment Board (SEIA) have increased CONAMA's enforcement responsibilities. As a result of the above-mentioned developments, CONAMA, along with various ministries and agencies, has drawn up an action plan for the enforcement policy. The plan, which focuses on co-ordination, includes a series of medium- and long-term objectives intended to help promote the conservation of Chile's environmental heritage and fulfill the country's international commitments. CONAMA is also considering putting in place a system that promotes self-compliance with environmental requirements in the country's manufacturing industry. In order to make these monitoring and enforcement objectives operational, on June 1, 1999, the Board of Directors of CONAMA approved the establishment of operating environmental enforcement committees, both nationally and regionally.

  The operating enforcement committees on both levels met periodically during the course of the year to coordinate activities related to the enforcement of environmental assessment resolutions issued by the Environmental Impact Assessment Board, as well as emission and quality standards, and prevention and clean-up plans. These committees also played a role in coordinating the enforcement of legal and regulatory provisions on the environment as well as water and biodiversity (*Ley de Caza, Pesca, Regulaciones Forestales*, etc. [act respecting hunting, fishing, forestry regulations, etc.]).

PRIVATE ACCESS TO REMEDIES AND PROCEDURAL GUARANTEES

Article 6 of the Canada – Chile Agreement on Environmental Cooperation stipulates that each Party shall ensure that interested persons may request the Party's competent authorities to investigate alleged violations of its environmental laws and regulations and shall give such requests due consideration in accordance with law. The article also states that each Party shall ensure that persons with a legally recognized interest under its law in a particular matter have appropriate access to administrative, quasi-judicial or judicial proceedings for the enforcement of the Party's environmental laws and regulations.

Article 7 of the Canada – Chile Agreement on Environmental Cooperation stipulates that each Party shall ensure that its administrative, quasi-judicial and judicial proceedings are fair, open and equitable.

Law 19.300 in the General Environmental Law (LBMA) establishes the right to take action against a resolution on environmental matters. This can be done, for example, where resolution rejects the development of an environmental impact declaration or where a resolution rejects or establishes conditions to an environmental impact study. In the case of a declaration, the person responsible for the project may bring this type of action before CONAMA's Executive Director, and in the case of studies, before the organization's Board of Directors. It is important to indicate that this right can also be exercised by members of the public and by those who contributed directly to an environmental impact study and whose contributions have not been properly addressed.

In 2000, 44 complaints were submitted and processed by CONAMA's Executive Management and Board of Directors.

The General Environmental Law provides for actions, which can be undertaken to reverse environmental damage. Those eligible to avail themselves of this are natural, judicial, public or private persons who have suffered damage or prejudice, municipalities, for occurrences that take place within their respective jurisdictions, and the State, through its Council for Defence.

The actions may be brought before magistrate either in the location where the damage was caused or the domicile of the person affected by the damage; this decision is made by the injured party.

The *Constitución Política de la República de Chile* (CP) [political constitution of the Republic of Chile] recognizes the application of the *Acción de Protección de Garantías Constitucionales* [constitutional guarantees protection action]. Constitutional guarantees include the right to live in a pollution-free environment (Art. 19 Nº 8). A protection action is applicable in cases where the right to live in a pollution-free environment is infringed by a given authority or person. The action is brought before the corresponding Court of Appeals, which is required to immediately make any rulings required to re-establish the rule of law.

There are currently 14 protection actions in progress.

The Political Constitution also recognizes the right to exercise an *Acción de Nulidad de Derecho Público* [action for nullity pursuant to public law]. The aim of this action is to prevent any magistrate, person or group of people from acquiring authority or rights other than those explicitly provided for by the Constitution and applicable laws. This action may be brought before the ordinary courts of justice according to the regular proceedings in the code of civil procedure.

To date, there are four actions for nullity underway in relation to environmental protection issues.

Act 19.300 also recognizes the right to bring an ordinary indemnity action. This action must be brought by the Party directly affected by the environmental damage. Its objective is to repair the damages caused. The process is brought before the ordinary courts of justice in accordance with the terms provided for in the code of civil procedure.

Articles 20, 50 and 64 of General Environmental Law (19.300) establish administrative procedures for lodging claims against resolutions issued by environmental institutions. Article 20 entitles the person in charge of a project that has been submitted for an environmental impact assessment to the right to file a claim against any resolution that rejects an environmental impact declaration or that rejects or imposes conditions on an environmental impact study. Article 50 of Law 19.300 provides for claims against orders that establish primary or secondary standards for environmental quality, emission standards, prevention or clean-up plans as well as special regulations for cases of emergency. This claim may be made by any person who considers that such regulations are not in keeping with Law 19.300 and have caused such person damages. Lastly, article 64 stipulates that, as opposed to resolutions that impose sanctions for failure to comply with standards and conditions under which the environmental impact study or declaration were approved, the person in charge of the project sanctioned is entitled to lodge a claim.

All the above-mentioned claims must be resolved before the appropriate court of justice. There are currently 15 claims for administrative issues related to Law 19.300 underway.

III. REPORT ON THE 2000-2001 PROGRAM AND BUDGET

COOPERATIVE ACTIVITIES

Cooperative activities approved under the 2000-2001 Annual Program of the Commission focused on three major themes: enforcement of and compliance with environmental legislation; public consultation and participation in environmental management; and trade and environment. This section presents a brief description and status report of the projects.

00.1 ENFORCEMENT OF AND COMPLIANCE WITH ENVIRONMENTAL LEGISLATION

00.1.1 Overview of Enforcement and Compliance Frameworks in Chile and Canada

The objective of this project was to provide a baseline understanding of current policies and practices in the area of environmental law enforcement in both Canada and Chile. In the CCAEC, both Parties committed to effectively enforce their respective environmental laws and regulations through appropriate government action.

CONAMA and Environment Canada coordinated the preparation of an update of the 1999 report entitled *Enforcement and Compliance Frameworks in Chile and Canada*. The Canadian section includes an overview of the constitutional context, federal environmental laws and commitments, enforcement structure and philosophy; compliance promotion, inspection planning, enforcement tools, enforcement and compliance policies, compliance indicators and training. The Chilean report covers its constitutional, legal and institutional background, its regulations, its control and enforcement environmental legislation and its compliance with environmental legislation.

The report remains a good vehicle for sharing information on the enforcement structure and compliance activities currently in place in Canada and Chile.

The final report entitled *Environmental Enforcement and Compliance Frameworks in Canada and Chile 2001* was published in December 2001 and is available on the National Secretariats' websites http://can-chil.gc.ca and http://www.conama.cl/chile-canada.

00.1.2 Implementation of Basel Convention

The Basel Convention was ratified by both Canada and Chile to limit and control the transboundary movement of hazardous waste. The objective of this project is to exchange information and technical expertise regarding the implementation of the Basel Convention in Canada and Chile.

In November of 2000, three Chilean officials representing the Ministry of Health, the National Customs Service and the National Environmental Commission participated in a technical visit to Canada in order to familiarize themselves with the Canadian implementation of the Convention. In addition to technical discussions with Environment Canada officials in Ottawa, the Chileans visited a regional customs border site in Montreal, Quebec where they were able to watch officials inspect shipments of hazardous waste.

The second phase of the project, will be extending into the next work program under the Agreement and will include a workshop on the implementation of the Convention with a view to further share the Canadian experience in implementing our obligations under the Convention.

00.1.3 National Enforcement Management System and Intelligence System (NEMISIS)

The objective of this project was to assess the possibility of transferring the Canadian-designed NEMISIS system to Chile to enable them to manage, monitor and report on environmental enforcement activities.

A workshop on the NEMISIS system was held in Santiago on August 22, 2001. Officials from Environment Canada's Enforcement Branch provided a presentation and demonstration on the system and participated in a discussion on the relevance and applicability of such as system for Chile. Workshop participants included CONAMA's Executive Director and members of CONAMA's National Enforcement Committee.

It appears as though it will be technically possible to transfer the system to Chile, however it will need to be modified to allow for the management of enforcement activities as they pertain to Chilean legislation. Phase II of this project continues into the third work program.

00.2 PARTICIPATION OF CIVIL SOCIETY IN ENVIRONMENTAL MANAGEMENT

00.2.1 Report on Public Participation in Environmental Management

The objective of this project was to enhance and strengthen the participation of the public in environmental management and to promote environmental stewardship and awareness in Canada and Chile.

CONAMA and Environment Canada updated their 1999 report entitled *Public Participation in Environmental Management*, which describes and analyses the public participation systems in place in Chile and Canada. The Canadian section deals with the issue at the federal level, the role of public participation, trends and challenges at a national and international level, consultation methods and success stories and existing opportunities for engaging the public. The Chilean section describes a national level approach with respect to public participation in environmental matters, civil society's participation in the National System of Environmental Management in particular the Environmental Impact Evaluation System (SEIA), the development of environmental quality norms and decontamination plans. It also deals with public participation in different bodies and describes different initiatives currently underway in Chile.

The report entitled *Public Consultation and Participation in Environmental Management in Canada and Chile 2001* was published in April 2002 and is available on the National Secretariats' websites http://can-chil.gc.ca and http://www.conama.cl/chile-canada.

00.2.2 Workshop on Public Participation in Environmental Decision Making

Based on the findings of the report "Public Participation in Environmental Management in Canada and Chile" (project 99.2.1), which identified policies and methods to promote public participation in the two countries, the Joint Public Advisory Committee hosted a workshop on

"Public Participation in the Environmental Decision-Making Process in Chile and Canada" that took place in Santiago, Chile on October 3 and 4, 2000.

The objectives of this initiative were: to discuss public participation as a means of improving environmental management; to agree on basic concepts related to public involvement; and to identify concrete cooperative activities to enhance public participation. The four themes discussed at the workshop included:

1. Public Participation in Environmental Management;
2. Strengthening Civil Society for Environmental Management;
3. The Role of Civil Society in Monitoring, Assessment and Oversight of Environmental Regulations and Policies; and
4. Public Participation and Environmental Disputes.

These subjects were discussed by knowledgeable professionals from the public and private sector, at an event attended by an audience of over sixty people representing government, non-governmental organizations, universities and other institutions. The activity was divided into presentations and group work in workshops, during which there were intense discussions of the different subjects covered.

00.2.3 Action at the Community Level Website

The main objective of this project was to facilitate the exchange of information regarding community-based environmental initiatives in both countries and to share successful experiences of programs and policies which advance community action. The intent was to make information available via the internet in order that direct contacts could be established between communities and citizens of the two countries.

A description as well as summaries of the major national environmental programs operating at the community level in both countries were prepared. Canada presented community programs in which Environment Canada is involved, such as Millennium Eco-Communities, Ecosystem Initiatives, Eco-Action 2000, the Climate Change Action Fund and Strategies for a Living Planet. Chile organized its programs under two main categories, the "Chile I care for you" Campaign and local community projects financed by the Environmental Protection Fund in 1999.

This section of the National Secretariats' websites is available at http://can-chil.gc.ca (http://can-chil.gc.ca/English/Activities/Work/2000wp/2000wp.cfm#00.2.4) and http://www.conama.cl/chile-canada.

00.2.4 Canada-Chile Agreement on Environmental Cooperation (CCAEC) website

The overall goal of this long-term project is to provide the general public with easy access to current information on the CCAEC and related bilateral cooperative activities through the internet. This project supports the CCAEC's objective to promote transparency and public participation.

The web sites of the National Secretariats, which were launched at the first council session in November 1998, are one of the main tools to disseminate information about the objectives and text of the Agreement; the Commission, the implementation of the Agreement and cooperative activities. This information is available in the three official languages of the Commission

(English, French, and Spanish). Although the two sites are maintained independently by each National Secretariat, efforts are made to have a similar structure and content.

National Secretariats make best efforts to ensure that the websites are kept up to date. The Internet addresses of the National Secretariats are http://can-chil.gc.ca and http://www.conama.cl/chile-canada.

00.2.5 Environmental Law and Regulation Database

The objective of this project was to facilitate access, through the internet, to basic information on federal or national environmental laws and regulations in effect in both countries.

CONAMA and Environment Canada have set up a comprehensive public environmental acts and regulations database. These are a valuable resources for government program staff, industries, specialists, lawyers and international organizations. The database contains summaries on selected environmental legislation, with links to text versions. The databases are accessible on the National Secretariats' websites.

00.2.6 Pollutant Release and Transfer Registry (PRTR)

The objectives of the project were to assess the feasibility for a Pollutant Release and Transfer Register (PRTR) system in Chile and to enhance Canada's National Pollutant Release Inventory (NPRI) through a joint project with Chile and United Nations Institute for Training and Research (UNITAR). This project was intended to promote public participation and to facilitate access to information on the quality of the environment. PRTRs can contribute to reducing emissions of pollution to air, water and land, and promote effective environmental management overall.

Environment Canada, CONAMA and UNITAR jointly coordinated a workshop on PRTR to take place in Santiago in October of 2001. Due to the events that occurred on September 11th in the United States the workshop was postponed and will occur under the next work program. The workshop will include an introduction to the concept and presentations by representatives of UNITAR, CONAMA, Mexico's National Ecology Institute and Canadian government, industry and non-governmental organization. It aims to make use of the practical experience gained through the Canadian national and other PRTR programs, UNITAR's standard guidance and training activities and Chile's work with emissions inventories.

00.3 Trade and Environment

00.3.1 Round Table on Trade and Environment

At their Second Regular Session in June 2000, Council agreed to expand the work program to include cooperative activities in the area of trade and environment. The first activity identified was to establish a permanent round table to discuss key policy issues related to the trade and environment linkage.

Two round tables took place under the 2000-2001 work program each of which included a private round table of government officials together with a public round table including invited representatives of academic, business and non-governmental organizations. The first round table which took place in Santiago in October 2000 explored the precautionary approach as its

key theme. The second round table took place in Ottawa in April 2001 and explored environmental assessments of free trade agreements. The third round table on certification will take place in early 2002. Based on the success of these round tables, Parties agreed to include round tables in future work programs.

00.3.2 Additional Project on Trade and Environment – Workshop on CDM Opportunities

During its 2nd Session, Council recommended that the work program include an additional activity related to the theme of trade and environment. Council suggested that the project should demonstrate direct linkages between the free trade agreement and the environmental agreement and involve the private sector of both Parties.

On December 3rd, 2001 a workshop was held in Santiago entitled "The Carbon Market: Business Opportunities between Canada and Chile under the Clean Development Mechanism". This workshop was hosted by the Canadian Clean Development and Joint Implementation Office, CONAMA and Urquidi, Riesco, Ramirez and Associates.

The workshop explored business opportunities in the region and in the forestry sector, partnerships, and technological solutions to mitigate climate change.

BUDGET

Expenses related to the implementation of the Agreement are incurred in three areas of implementation: (1) cooperative activities; (2) expenses related to the Joint Public Advisory Committee (JPAC), and (3) expenses related to the work of the Joint Submissions Committee (JSC). As per the 2000-2001 Annual Program and Budget approved by the Council in June 2000, expenses related to the three broad components of the budget were shared by the two parties.

In addition, financial and in-kind support was provided by both Environment Canada and CONAMA to help implement the projects and cover other activities. Administrative and logistical support was also provided to help carry out the various tasks and responsibilities of the National Secretariats, including the organization of the Council Session.

IV. REPORT ON SUBMISSIONS ON ENFORCEMENT MATTERS

Since June 2000, three submissions have been filed under Article 14 of the CCAEC. The following provides a brief description of each submission and its status.

1. THE CASCADA-CHILE SUBMISSION

Matter addressed:
The environmental impact study of the Cascada-Chile wood chip and structural panel manufacturing plant proposed by Compañía Industrial Puerto Montt, S.A., a joint venture between the US corporation Boise Cascade and the Chilean Maderas Cóndor, S.A. (CIPM).

Status:
Terminated by the Joint Submission Committee as it did not warrant the development of a factual record.

2. THE ANDACOLLO COBRE SUBMISSION

Matter addressed:
The assessment, approval, and on-going operations of the Andacollo Cobre (Andacollo Copper) mining project of the Mining Company El Carmen de Andacollo (EMCA).

Status:
The Joint Submission Committee is currently considering this submission in light of the response provided by Chile to determine if it warrants the development of a factual record.

3. THE ATMOSPHERIC DECONTAMINATION SUBMISSION

Matter addressed:
Public consultation prior to the amendment of the Plan for Prevention and Atmospheric Decontamination of The Metropolitan Region.

Status:
The National Secretariats determined that this submission did not meet the initial criteria of Article 14(1) and terminated the process.

V. ADDITIONAL INFORMATION

THE CANADA-CHILE AGREEMENT ON ENVIRONMENTAL COOPERATION

The Canada-Chile Free Trade Agreement (CCFTA) and the CCAEC entered into force in July 1997. The goal of the CCAEC is to ensure that environmental laws and regulations in both countries provide for high levels of environmental protection. Under the CCAEC, the Parties committed to enhancing their cooperation, to effectively enforcing their environmental laws and regulations, to promoting sustainable development, to supporting the environmental goals and objectives of the CCFTA and to increasing transparency, public participation and pollution prevention. The Agreement also provides for citizens submissions on enforcement matters.

The Agreement establishes the forum through which Canada and Chile conduct cooperative activities and confirms the right of each country to establish its own policies, priorities and levels of environmental protection.

THE COMMISSION FOR ENVIRONMENTAL COOPERATION

The Canada-Chile Commission for Environmental Cooperation (CCCEC) is comprised of the Council, the Joint Public Advisory Committee (JPAC), and the Joint Submission Committee (JSC). The Commission is assisted in the implementation of the Agreement by two National Secretariats, respectively located in each capital region.

The **Council** is the governing body of the Commission. The Honourable David Anderson, Canada's Minister for the Environment, is Canada's representative on the Council. Adriana Hoffmann J., Executive Director of Chile's National Environmental Commission (CONAMA), is the Chilean Council member. The Council is responsible for overseeing the activities of the Commission and promoting cooperation between the Parties with respect to environmental matters.

The role of the **Joint Public Advisory Committee** (JPAC) is to provide advice to the Council on all matters within the scope of the Agreement. The JPAC consists of six members, three appointed by each Party for a three year term, to act as a single, independent, binational advisory body. The purpose of the JPAC is to integrate an advisory mechanism of independent citizens into the official structure of an intergovernmental agreement. The JPAC acts as a link between the Council and people and organizations interested in the environment and trade relationship between Canada and Chile.

The Agreement established the **Joint Submissions Committee** (JSC) to provide independent consideration of submissions on enforcement matters. The Committee is appointed by the Council.

THE NATIONAL SECRETARIATS

The CCAEC stipulates that each country shall establish a **National Secretariat** to support the activities of the Canada-Chile Commission for Environmental Cooperation. The Canadian

National Secretariat is located within *Environment Canada*. Its Executive Secretary is *Jenna* Mackay-Alie, Director Americas Branch, Policy and Communications Service. The Chilean National Secretariat is housed in the Chilean Commission for the Environment (Comisión Nacional del Medio Ambiente or CONAMA). Alvaro Sapag, Chief of the Legal Department and the International Policy Unit at CONAMA, is its Executive Secretary.

The two National Secretariats work in close collaboration. Some of their key activities include :

- coordinating the implementation of the work programs
- answering requests for information and disseminating information about the CCAEC;
- providing administrative support to the JPAC for their meetings and activities;
- providing administrative support to the JSC
- providing assistance and information to the Council, including with respect to the appointment of the Experts in Environmental Matters;
- planning and organizing Council Sessions.

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Meeting of Environment Ministers of the Americas

This section includes the final communiqué from the Meeting of Environment Ministers of the Americas that took place in Montreal on March 29th and 30th of 2001. It also provides an overview of the Agreement and a description of the Commission.

On March 29th and 30th of 2001, Canada's Minister for the Environment, David Anderson, hosted a meeting of his Ministerial colleagues to discuss key environmental issues facing the hemisphere. CONAMA's former Executive Director, Adriana Hoffmann, lead the Chilean delegation to this meeting which provided the two with the opportunity to share their views on environmental management. The final communiqué for the meeting provides a useful outline for cooperative action within the hemisphere and will be taken into serious consideration by the Canada-Chile Commission for Environmental Cooperation as it develops its future work programs and activities. The communiqué adopted by Ministers follows.

MEETING OF ENVIRONMENT MINISTERS OF THE AMERICAS
MARCH 29-30, 2001

Ministerial Communiqué

1. We, the Ministers of the Environment and Heads of delegations from the 34 democratically elected governments of the Americas, met in Montreal, on March 29-30, 2001, to share our visions and priorities, and discuss how we can meet the most pressing environmental challenges of the hemisphere. In view of the Third Summit of the Americas, which will take place in Quebec City, on April 20-22, 2001, we bring the following environmental issues to the attention of our leaders.

2. We recognize the different levels and patterns of development of countries, their cultural diversity, and the diversity of ecosystems within the hemisphere. We are aware of the relationship between the environment and socio-economic factors such as poverty, unsustainable production and consumption patterns, inequity in distribution of wealth and the debt burden. We therefore resolve to work together with the aim of ensuring that economic, social and environmental policies are mutually supportive and contribute to sustainable development. We know there are many existing initiatives undertaken by relevant regional and international organizations on which to build.

3. We thank Canada for hosting the first meeting of Environment Ministers in support of the Summit of the Americas which is a useful opportunity to advance our environmental agenda. We will take advantage of other international fora, as appropriate, to meet again.

International Environment and Sustainable Development Issues

4. Since the United Nations Conference on Environment and Development in 1992, the countries of the hemisphere have taken important strides in defining the international sustainable development agenda and have taken some initial but important steps toward implementation. The time has come to make this the decade of action. We undertake to actively participate in the preparatory process for the 2002 World Summit on Sustainable Development in Johannesburg and to work to ensure its success. We will also ask the OAS through its General Secretariat, in coordination with other agencies, to organize a meeting at the ministerial level before the end of 2001, to be held in Bolivia to celebrate the fifth anniversary of the Santa Cruz Summit of 1996, and present contributions to the Rio + 10 Summit in 2002, recognizing that by its nature, sustainable development has long term goals that require the countries of the Hemisphere to act in concert in this area.

5. To achieve sustainable development, we recognize that policy coherence begins at home and must be further improved at the international level. We welcome UNEP Governing Council's recent decision 21/21 for governments to undertake a comprehensive policy-oriented assessment of options to strengthen and promote a more effective system of international environmental institutions and coordination. We emphasize the need for effective mechanisms,

including financial mechanisms and other means of support as appropriate such as but not limited to, the Global Environment Facility, to enhance capacity-building, technology transfer and sustainable development projects with a view to promoting and supporting the implementation of multilateral environmental agreements. We reaffirm our commitment to implement multilateral environmental agreements (MEAs) to which we are Parties, and will work on building synergies amongst MEAs to enhance their effective implementation.

6. We discussed the critical issue of climate change. There was not full consensus on this issue among Ministers of the Hemisphere.

The Challenges of Environmental Management in a Changing Hemisphere – the Need for Innovation

7. We recognize that while poverty results in certain kinds of environmental stress, a major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production which is a matter of grave concerns, aggravating poverty and imbalances. We intend to maximize the potential for mutually supportive policies regarding economic integration and environmental protection. Strengthening environmental management systems in our countries starting with improved knowledge, appropriate tools and incentives and better partnerships, is of the utmost importance. We intend to work, in particular, to ensure that the process of economic integration supports our ability to adopt and maintain environmental policy measures to achieve high levels of environmental protection.

8. We will work in partnership to accelerate the development and application of environmental knowledge, such as national indicators to help monitor progress, by promoting, for example, further sharing of best practices and information exchanges between existing institutions and organizations and facilitating the development of environmental science networks across the hemisphere, taking into account, for example, the Convention on Biological Diversity.

9. Public participation is a key element of the decision-making process in environmental policies. We aim to maximize opportunities to increase knowledge, public education and participation, transparency and accountability on environmental issues, including by enhancing access to information about environmental conditions and technologies at the community level, in keeping with national legislation.

10. We will promote an innovative business climate through an appropriate mix of environmental policy initiatives and tools, based on a sound regulatory framework, including market instruments and voluntary initiatives.

11. In this context, we recognize the importance of building national capacity to develop and strengthen environmental laws and institutions and for environmental law implementation, compliance and enforcement, and will work together to combat unlawful international activities that harm the environment.

12. We continue to advance the development of pollution prevention strategies, in partnership with industry, environmental groups, indigenous and local communities, with the goal of increasing investment to encourage pollution prevention.

13. Aware of the accumulating costs of environmental degradation, we urge international organizations including multilateral financial institutions to consider ways and means of identifying and addressing this issue.

Improving the Environment for Better Human Health

14. We recognize the interrelationship between the environment and human health. We will build stronger bridges between the environment and health sectors to take more effective action. In this regard, we call on PAHO and UNEP to support the convening of a regional meeting between Ministers of Environment and Ministers of Health to take stock of progress achieved, to identify priority areas for renewed emphasis and cooperative initiatives, and to explore ways of moving the environmental health agenda forward in the Americas and globally, with a view to contribute to the 2002 World Summit on Sustainable Development.

15. We are encouraged by the conclusion of negotiations to reduce or eliminate the production, use and release of persistent organic pollutants (POPs) that pose threats to human health and the environment, and encourage governments to sign and ratify this convention.

16. We will encourage the implementation of the resolution of the Intergovernmental Forum on Chemical Safety (IFCS) held in Bahia, Brazil, last year.

17. We will work to improve air quality by: increasing our efforts and cooperative work on emissions such as transportation emissions, industrial emissions and transboundary pollution; supporting scientific research and sharing of best practices in the areas of air emission inventories, smog-forecasting, health impact advisories and community programs; encouraging public and private sectors and individual actions.

18. We will strive to enhance access to safe drinking water and sanitation services, and strengthen national and regional capacities for integrated water resources management (e.g., source water and watershed protection, water use efficiency, water quality and quantity, and water availability) and for waste management, by reinforcing cooperative partnership. We will work to help ensure that freshwater and marine and coastal environments, including coral reefs, are sustained and to prevent land-based sources of marine pollution.

19. We stress the need to lessen the vulnerability of our citizens and communities and reduce the impacts on our economies caused by natural phenomena such as, *inter alia*, floods, fires, hurricanes, earthquake, or drought. We will endeavour to take preventative measures and we will promote conservation of our ecosystems that serve to minimize the effects of these phenomena. We will also explore means to improve science and monitoring, including early warning systems necessary to reduce vulnerability to natural phenomena and provide accurate and useful information to the public.

Conservation of Biodiversity and Ecosystems

20. Half of the world's wealthiest nations, as measured by the richness of their endemic flora and fauna, are countries of the Americas. Each of the countries of the Americas shares many ecosystems with its neighbours. Many of these ecosystems are under stress as a result of human activities. Healthy and productive ecosystems are the very basis of the economic and social health of nations. We undertake to stimulate and strengthen cooperation for the conservation, management, and sustainable use of biological diversity and healthy ecosystems

throughout the Americas in support of the objectives of the Convention on Biological Diversity and other related agreements and initiatives. We welcome the efforts undertaken by the working groups established by the Conference of the Parties of the Convention on Biological Diversity to address the issues of access to genetic resources and the protection of traditional knowledge

21. We encourage governments to cooperate for the effective implementation of the Cartagena Protocol on Biosafety, particularly on issues related to capacity building and information sharing through the Biosafety Clearinghouse.

22. The development of the Inter-American Biodiversity Information Network (IABIN), first proposed at the Bolivia Summit in 1996, is an important stepping stone to effective management of biodiversity information, and an important complement to the Clearing House Mechanism of the UN Convention on Biological Diversity. We will expand partnership networks and information sharing systems in support of the IABIN.

23. Habitat losses are a major threat to biological diversity. We will seek to develop better information on losses of different habitat types and the implications for biodiversity. We will actively promote improved management of protected areas and in this regard, we commit to cooperative regional activities. We will explore, where appropriate, the expansion of existing hemispheric networks for terrestrial and marine protected areas, including linkages to create biological corridors such as the Mesoamerica Biological Corridor.

24. In many habitats, invasive alien species are a major threat to native species and may pose a significant cost to society. We support the further development of information sharing networks for invasive alien species as well as cooperative efforts on prevention, control, management, public education and outreach, and incident notification.

25. Consistent with domestic regulations and international obligations, we strongly support the development of a hemispheric strategy to enhance the conservation and sustainable use of migratory species throughout the Americas, beginning with the management of migratory birds, building on existing bird conservation initiatives, and including, *inter alia,* the protection of wintering and breeding areas and migration routes of species within and across boundaries.

26. We will promote the adoption of concrete and urgent actions toward the implementation of sustainable forest management, building on existing international instruments and cooperation such as criteria and indicator processes. We are committed to initiatives that will facilitate sustainable forest management, in particular the UN Forum on Forests, and fully support the implementation of the proposals for action of the Intergovernmental Panel on Forests and the Intergovernmental Forum on Forests.

27. Illegal trade in wild flora and fauna is a threat to our biodiversity and to the well-being and the livelihood of our people, who rely on the sustainable use of those wildlife populations and products. We will strengthen partnership networks and information systems to assist in the implementation of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES).

MEETING OF HEALTH AND ENVIRONMENT MINISTERS OF THE AMERICAS
MARCH 4-5, 2002
Ottawa, Canada

Ministerial Communiqué

1. We, the Ministers of Health and Environment of the Americas acting on the commitment made at the Summit of the Americas held in Québec City in April 2001, recognize the different levels and patterns of development of our countries. their cultural diversity, and the diversity of ecosystems within the hemisphere. We are aware of the relationship between the environment and socio-economic factors such as poverty, poor housing, unsustainable production and consumption patterns, inequity in distribution of wealth and the debt burden, and their impact on health. We particularly note the very negative impact that terrorism has on human life, human health and the environment and reject terrorism in all of its forms. While progress has been made to tackle health and environment issues in the region, economic, social and other challenges, such as the lack of adequate infrastructure and urban and rural planning, contribute to the persistence of certain diseases such as diarrhea and respiratory ailments. In addition, chronic and acute diseases can arise from inappropriate exposure to chemicals and other aspects of development. The burdens on health of environmental degradation affect current generations and may have increased impact on future generations. In particular, they affect vulnerable groups such as children, the elderly, and women as well as the least protected groups such as indigenous populations, rural populations, and the very poor. We express grave concern over this situation and recognize the need to focus our effort on common objectives, domestically and regionally, that open equal opportunities to achieve sustainable development throughout the region to achieve better health and improve living standards for all our people.

2. We thank the Government of Canada, the United Nations Environment Program (UNEP-RONA, UNEP-ROLAC) and the Pan American Health Organization (PAHO) for their active participation and technical expertise in the preparation and organization of this meeting.

Setting Future Directions for Health and Environment in the Americas

3. We reaffirm commitments made at the Pan American Conference on Health, Environment and Sustainable Human Development held in Washington D.C. in 1995 which resulted in the Pan American Charter on Health and Environment in Sustainable Human Development and the Regional Plan of Action. To fully accomplish these commitments, we take into account the urgent need to strengthen action plans bearing in mind common but differentiated responsibilities as set forth in Principle 7 of the 1992 Rio Declaration on Environment and Development. Countries should seek to further mobilize resources for their implementation and follow-up.

4. We acknowledge that action begins in our countries, where we commit to work in cooperation with all levels of government, the private sector, and civil society, encouraging enhanced community participation. Each country has primary responsibility for decision-making and for investing in health and the quality of the environment, recognizing the interdependence of

ecosystems across the region. These investments are one critical pre-condition to reducing inequality and alleviating poverty, leading ultimately to improving quality of life and social justice within the context of sustainable development for all people in the Americas.

5. We recognize the need to further strengthen and consolidate partnerships between ministries responsible for health and environment. Furthermore, building bridges between health and environment and other government sectors is vital to ensuring that health and well-being become increasingly recognized and systematically translated into national policies and programs. We are committed to improving communication, enhancing collaboration, and undertaking shared domestic action on human health and the environment, building upon action plans and strategies already in place or to be agreed upon. These efforts can contribute to our shared objective of promoting sustainable development in the region.

6. We acknowledge the significant progress in improving human health and the environment in the region since the endorsement of the Pan American Charter and Regional Plan of Action. With a better understanding of the opportunities and challenges, we underscore the value, importance, and need for the health and environment sectors to work more closely together in defining problems, identifying solutions, and implementing joint initiatives involving the public and private sectors as well as civil society. In this respect, we urge the OAS, PAHO, UNEP, the IDB and other relevant organizations to continue to take steps to formally integrate issues related to health and environment in their respective work programs and to strengthen interagency cooperation so that it is part of their *modus operandi.*

7. We agree on the need to consider a follow-up process that will help each country advance our work at the national and regional level, in preventing and mitigating threats to the environment and to human health. We agree to meet regularly prior to the Summits of the Americas to set directions and assess progress. In this regard, we agree to establish a task force comprised of countries throughout the Americas to make proposals on a follow-up process that does not duplicate work of existing international and regional organizations. We also agree that this task force take advantage of existing fora – such as PAHO Ministerial Councils, UNEP Regional Offices, as well as other relevant international, regional, and sub-regional organizations to maintain momentum in the realization of our objectives. In addition, we note the critical role of the OAS and the IDB in this vital matter and urge their continued engagement in these efforts as well as their support for member countries' strategies and programs related to sustainable development in the hemisphere.

Issues of common concern and shared goals

8. While we recognize there are differences among our countries, we also realize that we have many common concerns regarding threats to the environment and to human health and we recognize that these concerns can be more effectively addressed when we define and act on shared goals. In the spirit of protecting our ecosystems as service-providers for development, we agree that the following areas of priority require concerted action across the region:

    a) Integrated management of water resources, including water contamination and basic sanitation;
    b) Air quality;
    c) Health implications of natural and human-made disasters;
    d) Sound management of chemicals;
    e) Potential health impacts of climate variability and change particularly with respect to

small island developing states;
f) Workers' health, including the detrimental impact of HIV/AIDS on productivity;
g) Food security and safety; and
h) Ethics of sustainable development from a health and environment perspective.

9. As initial goals, we agree to consider working towards:

a) advancing the Water Supply and Sanitation Collaborative Council Vision21 Goals 2015 and 2025 towards universal coverage and hygiene, adopting the Millennium Summit Goals related to water, and developing and using practical technologies related to both water and sanitation;
b) preventing and abating water pollution from urban, industrial and agricultural sources through integrated water resource management and through efforts to fulfill commitments made in the 2001 Montréal Declaration on the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA);
c) undertaking an economic and technical assessment of sewage and water treatment systems in the region, including a comparative analysis of best and affordable practices in the application of instruments (economic, regulatory, policy) and a valuation of health benefits to fully promote access to services and gradually internalize costs in a fair and equitable manner;
d) exploring and using best practices for the improved management of solid wastes (including biomedical wastes);
e) fulfilling our commitment to phase out lead in gasoline and to further this work by developing national strategies to phase out lead from other sources;
f) developing national action plans to reduce air emissions from transportation sources including actions to decrease sulfur in gasoline and in diesel;
g) developing strategies to improve indoor air quality in homes, workplaces and public facilities;
h) bringing into force the Stockholm Convention, with a focus on the development of POPs inventories, and in particular on reducing reliance on, and seeking alternatives to, DDT;
i) developing pollutant release and transfer registries as a tool to manage exposure to chemical releases;
j) developing prevention, preparedness and response plans in cases of emergencies and disasters to reduce vulnerability of populations;
k) undertaking scientific research to improve our understanding of the health and environment effects of climate variability, including vector-borne diseases and of climate change; and
l) to enhance efforts between UNEP, UNDP, PAHO, and ECLAC, in building a regional proposal on the ethics of sustainable development to be taken to the World Summit on Sustainable Development.

Building and Sharing Our Capacities to Respond to Threats to Human Health and the Environment

10. We recognize that scientific and relevant traditional knowledge is the foundation of effective action in addressing threats to human health and the environment. High on our agenda is a commitment to expand and improve our understanding of the linkages between health and the environment and to improve the availability, understanding, and use of information, including

relevant traditional and local knowledge, at the regional, national and community levels. To further the development of this capacity across the region:

a) We agree to enhance our surveillance and monitoring of the health of populations, and of ecosystems.

b) We agree to support the development, through capacity-building, of integrated health and environment assessments for the region, building on existing knowledge and recognizing that capacity to carry out scientific assessments is key to decision-making and developing consensus for regional and national action.

c) We agree to further develop, harmonize as appropriate, and use indicators to inform decision-makers in environment and health management, and in national public policy , both domestically and within the hemisphere, of the current state of affairs and on the progress which is made. As a first step, we would work together to develop a set of indicators for children's health and the environment and water quality.

d) We agree to further exchange and disseminate knowledge through all mechanisms possible including conferences and other fora.

e) We agree to review the capacities of our current pan-national institutions to determine their abilities to assist nations and to review the capacities of individual countries to access, understand and use knowledge to address the common and unique problems which exist in each country and across the region.

f) We agree to explore and recommend means for improving the sharing of information for action and the exchange of best practices, with a focus on information and communication technology.

g) We agree to cooperate on training and development programs across the region because available and trained human resources are at the centre of the required research, analysis, and dissemination activities.

h) We agree that one of the most effective mechanisms to further the goals of improving both health and the environment is a population that understands the linkages and the action needed. We therefore agree to facilitate and support programs of public education and awareness, particularly with respect to encouraging compliance with and enforcement of laws and regulations.

Messages for the World Summit on Sustainable Development

11. We renew our determination to comply with the commitments entered into at UNCED, in the Rio Declaration and Agenda 21, in particular, Chapter 6, *Protecting and Promoting Human Health Conditions.*

12. We underscore the need to establish a dialogue that leads to the creation of an ethic for sustainable development.

13. As Health and Environment Ministers, we acknowledge the relationship between poverty, environmental quality and human health. We recognize the important preparatory process that is now under way in advance of the World Summit on Sustainable Development to be

held in Johannesburg, South Africa in August and September of 2002. We underscore the importance of investments in health as a key component of ensuring sustainable development, domestically, in our hemisphere, and globally.

14. We recognize the integrated management of water resources as an issue of special importance in the relationship between health and environment and we underscore the importance of establishing the economic and financial mechanisms to enhance our ability to ensure the quantity, availability and quality of water resources.

15. We urge:

a) leaders at the World Summit on Sustainable Development to explicitly recognize the need to make the integration of action and approaches to human health and environment a focus for development by building stronger bridges between ministries responsible for national health and environment, and other ministries. This can be done through enhanced communication, strengthened collaboration, and the development of shared agendas.

b) more specifically, leaders at the World Summit on Sustainable Development to make the protection of vulnerable populations, especially children, as they represent our future, a high priority.

c) technical and financial cooperation organizations to mobilize expertise and resources to support the development and implementation of programs and policies aimed at vulnerable populations.

16. We look forward to sharing the results of our efforts. We encourage leaders at the World Summit on Sustainable Development to make capacity-building, sharing information and best practices a priority. We recall and support the re-affirmation of the principles and commitments made in the October 23-24, 2001 Rio de Janeiro Platform for Action on the Road to Johannesburg.*

Final Messages

17. We stress the important role of civil society and other stakeholders in shaping national and regional action to mitigate and prevent threats to human health and the environment. We are committed to ensuring that civil society and other stakeholders are appropriately engaged in the development and implementation of national strategies.

18. We recognize the importance of on-going international efforts to mobilize and better manage investments to promote sustainable development. We encourage leaders participating in the UN International Conference on Financing for Development to be held in Monterrey, Mexico on March 18-22, 2002, to agree upon a path forward for financing development that is sustainable and consistent with the relevant health and environment goals of Agenda 21 and stress financing for the integrated management of water resources.

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*The United States did not participate in the negotiation of the Rio Platform for Action on the Road to Johannesburg. As a non-participant in the Rio Platform, the United States cannot reaffirm all of the principles and commitments contained therein.

19. This meeting of Ministers of Health and the Environment of the Americas has given us the opportunity to establish a hemispheric agenda which reflects our common concerns. We are prepared to put forward actions from this agenda which will enable us, within a framework of strategic regional integration, to contribute to the improvement of the quality of life of our peoples on the path to sustainable development for the entire region.

1999 WORK PROGRAM

INTRODUCTION

99.1 ENFORCEMENT AND COMPLIANCE WITH ENVIRONMENTAL LEGISLATION

- 99.1.1 Overview of Enforcement and Compliance Frameworks in Chile and Canada
- 99.1.2 Seminar on Effective Enforcement Policies and Approaches

99.2 PARTICIPATION OF CIVIL SOCIETY IN ENVIRONMENTAL MANAGEMENT

- 99.2.1. Public Consultation and Participation in Environmental Management
- 99.2.2 Workshop on Public Participation in Environmental Decision Making
- 99.2.3 Action at the community level
- 99.2.4 Information on the CCAEC
- 99.2.5 Environmental law and regulation database

BUDGET

INTRODUCTION

One of the main objectives of the Canada-Chile Agreement on Environmental Cooperation (CCAEC) is to promote environmental cooperation between the two Parties.

The present work program of the Commission for Environmental Cooperation covers the period November 1998 to December 1999. It takes into account previous and current cooperative activities between the two countries.

This first annual work program of the Canada-Chile Commission for Environmental Cooperation focuses on two areas of priority, with a view to supporting the objectives of the CCAEC and the obligations of the Parties. The priority areas are: environmental enforcement and compliance, and participation of civil society in environmental management.

The activities proposed for the first year are designed to:

- promote a better understanding of the environmental situation in the two countries;
- establish a network of contacts;
- encourage information sharing; and
- provide concrete data and recommendations for future initiatives.

The 1999 work program is intended to lay the foundation for future cooperative activities.

The National Secretariats will be responsible for overseeing the implementation of the work program. Experts and relevant organizations within both countries will carry out the approved activities. Expenses related to project implementation will be shared between the two governments. The National Secretariats will coordinate the preparation of an annual report on progress made under the cooperative work program.

ANNUAL PROGRAM

99.1 ENFORCEMENT AND COMPLIANCE WITH ENVIRONMENTAL LEGISLATION

Background

One of the objectives of the CCAEC, as stated in Article 1(g), is to "enhance compliance with, and enforcement of, environmental laws and regulations". Pursuant to Article 5, "each Party shall effectively enforce its environmental laws and regulation through appropriate government action". To this end, the Council is mandated under Article 10(5) to "encourage effective enforcement by each Party of its environmental laws and regulations" "compliance with those laws and regulations" and "technical cooperation between the Parties".

Objectives

To strengthen the effectiveness of environmental enforcement and compliance activities in Chile and Canada, by providing a forum for the exchange of information and experience on environmental enforcement and compliance policies and practices to:

- support the efforts of both Parties in developing a framework for achieving compliance with environmental legislation, regulations, and standards;
- promote appropriate compliance mechanisms including voluntary compliance agreements; and
- support access to, and the dissemination of, information on appropriate environmental monitoring and management practices within enterprises.

Activities

99.1.1 Overview of Enforcement and Compliance Frameworks in Chile and Canada

Article 5 of the CCAEC commits the Parties to effectively enforce their environmental laws and regulations through appropriate government action. The Agreement identifies a broad range of possible enforcement actions governments may employ to achieve compliance with environmental laws and regulations.

In order to establish a baseline understanding of current practices, the National Secretariats will coordinate the preparation of a summary report describing how each country is enforcing its environmental laws and regulations, and promoting compliance, indicating priorities, roles and responsibilities, a list of contacts at the working level, and challenges they are facing. This report will be a vehicle for sharing information on inspection methodologies, training, compliance indicators and verification procedures. It should draw, to the extent possible, on previous studies and existing data.

Time frame: The report will be completed in 1999.

Estimated cost: $Cdn 18,000: $Ch 5.5 million

Expected result: A report on current environmental enforcement and compliance policies, and practices in both countries.

99.1.2 Seminar on Effective Enforcement Policies and Approaches

As a second step, the National Secretariats will facilitate the organization of a meeting of Canadian and Chilean managers responsible for enforcing laws, regulations or standards for the purpose of discussing the findings of the report on enforcement frameworks (99.1.1), sharing enforcement related strategies, expertise and technical knowledge; identifying enforcement and compliance databases; identifying opportunities for technical visits and training; determining constraints and possible ways to enhance effective monitoring and enforcement in the two countries; defining areas of cooperation where we can build on our strengths to offer a better service in each country; and preparing recommendations for the consideration of the CCAEC Council.

Time frame: The seminar will take place in 1999, before the next meeting of the Council, and, preferably, in conjunction with an international meeting on enforcement.

Estimated cost: $Cdn 20,000: $Ch 6.1 million

Expected result: Recommendations on future areas for cooperative work on effective enforcement and compliance.

99.2 PARTICIPATION OF CIVIL SOCIETY IN ENVIRONMENTAL MANAGEMENT

Background

Promotion of transparency and public participation in environmental management is another objective of the CCAEC. Article 10(6)(a) directs the Council to promote and, as appropriate, develop recommendations regarding public access to information concerning the environment that is held by public authorities of each Party, and opportunity to participate in decision-making processed related to such public access.

A number of articles of the CCAEC address directly and indirectly the provision of information to the public. One of the objectives of the Agreement is to promote transparency and public participation in the development of environmental laws, regulations and policies. Each Party has committed, with respect to its territory, to promoting education in environmental matters, including environmental law, as per Article 2(1)(c).

Objectives

To enhance and strengthen the participation of civil society in environmental management and to promote environmental citizenship and awareness in both countries. Public participation initiatives are underway in both Canada and Chile. Work in this area will facilitate the exchange of information and experience between non-governmental as well as governmental organizations in that area.

To increase public awareness of the CCAEC and dissemination of information regarding the scope of the agreement, its institutions, the role it plays in protecting the environment, as well as the cooperative activities, and related information.

Activities

99.2.1 Public Consultation and Participation in Environmental Management

The National Secretariats will coordinate the preparation of a status report on existing models, mechanisms and tools for public participation in the environment management of each country. This study would also identify: consensus-building and negotiating approaches; describe existing initiatives to facilitate multi-stakeholder consultation and participation at the local, regional and national levels.

Time frame: A Canadian and a Chilean organization will carry out the research. The report will be completed in 1999, in time for the next meeting of the Council.

Estimated cost: $Cdn 10,000: $Ch 3.1 million

Expected result: A report on the state of public participation in environmental management processes in Canada and Chile.

99.2.2 Workshop on Public Participation in Environmental Decision Making

Based on the findings of the report (99.2.1), national experts will identify elements for a possible future joint seminar on facilitating and enhancing public participation.

Time frame: Proposal to be developed in time for consideration as part of 2000 work program.

Estimated Cost: National Secretariat staff time.

Estimated Results: A decision on a cooperative activity on facilitating and enhancing public participation in environmental decision making.

99.2.3 Action at the Community Level

Recognizing the contribution of civil society to sound environmental management and the importance of local and community initiatives to protecting the environment, both National Secretariats will facilitate the exchange of information on examples of community action, and share best practices on programs and policies to encourage such initiatives. Material prepared for national web sites on community initiatives and tools to implement them will also be made available, so that direct contacts might be established between communities of the two countries.

Time frame: National Secretariats web sites will create a page containing relevant information and hot links by September 1999, and will update it regularly.

Estimated Cost: National Secretariat staff time; and $Cdn 4,000: $Ch 1.2 million to cover expenses related to translation, information gathering and communications.

Expected result: Enhanced awareness of Canadian and Chilean communities of programs undertaken at the local level in both countries.

99.2.4 Information on the CCAEC

Each National Secretariat will create its own Internet site and will work with the other National Secretariat to ensure parallel development and maintenance of the sites, and similar structure and contents. These sites will provide the general public access to the official text of the Agreement, associated documents and publications, including the activities of the CCAEC and membership of the various bodies of the Commission. After one year of operation, the National Secretariats will evaluate the use of the web sites with a view to meeting the information needs of the users and ensuring continuous improvement.

Time frame: The Internet site will be launched in November 1998 and will be updated on an ongoing basis.

Estimated cost: National Secretariat staff time

Expected results: The general public has access to current information on the CCAEC.

99.2.5 Environmental law and regulation database

An important objective of the web sites is to provide information on current environmental laws and regulations. As a first step, the governments will make accessible basic information on environmental laws and regulations in effect in the two countries at the federal level. Governments will make available their recent legal and regulatory publications, and will invite organizations with an interest in environmental law to share their research and publications. A national focal point will be designated in each country to coordinate this project.

Time frame: This project will be completed in 1999 and will be continued in 2000. The information will be updated on an ongoing basis.

Estimated cost: $Cdn 8,000: $Ch 2.4 million

Expected result: The general public will have Internet access to information on Canadian and Chilean environmental legislation.

BUDGET

1. Annual program

PROJECTS SUMMARY TABLE

Project no	Project title	Estimated cost $Ch million	Estimated cost $Cdn 000	Completion date
99.1	**Enforcement and Compliance**			
99.1.1	Enforcement and Compliance Frameworks Overview	5.5	18	1999
99.1.2	Seminar on Effective Enforcement	6.1	20	October 1999
99.2	**Public Participation**			
99.2.1	Public Consultation and Participation in Environmental Management	3.1	10	October 1999

99.2.2	Public Participation in Environmental Decision Making		--	2000
99.2.3	Information on Actions at the Community Level	1.2	4	1999
99.2.4	Web Sites on the CCAEC		--	1999
99.2.5	Environmental Legislation	2.4	8	1999
		18.3	60	

2. Joint Public Advisory Committee (JPAC)

All expenses related to supporting the activities of the JPAC will be shared by the two parties according to the rules of procedure of the Commission. Expenses include the reimbursement of travel expenses of JPAC members, organization of their annual meeting, translation of documents and simultaneous translation during the annual meeting. Administrative support will be provided by the two National Secretariats.

3. Joint Submission Committee (JSC)

Each Party will ensure that funds are available to handle submissions on enforcement matters. Costs associated with the work of the Joint Submission Committee and the preparation of factual records will be equally shared between the two countries.

Last update : 29 April 2000
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2000-2001
ANNUAL PROGRAM AND BUDGET

PRELIMINARY VERSION

INTRODUCTION

One of the main objectives of the Canada-Chile Agreement on Environmental Cooperation (CCAEC) is to promote environmental cooperation between the two Parties.

The present work program of the Commission for Environmental Cooperation covers the period from July 2000 to June 2001. It takes into account previous and current cooperative activities between the two countries.

In order to achieve the objectives of the CCAEC and help fulfill the obligations of the Parties, the second annual work program of the Commission focuses on three priority areas: environmental enforcement and compliance, participation of civil society in environmental management, and trade and the environment, which was added as a new area of work.

The activities proposed for this second program are designed to strengthen environmental protection in the two countries, to encourage the dissemination of information and to facilitate the establishment of networks among professionals, researchers and organizations sharing similar interests on CONAMA.

The 2000 work program is intended to build on the joint work done over the last few years in the two countries and to keep producing concrete results. The National Secretariats will continue to coordinate the implementation of the various projects. Experts and relevant organizations in both countries will be invited to assist in the delivery of the approved activities. Expenses related to project implementation will be shared between the two governments.

The annual report will provide information on the results achieved under the Annual Program.

COOPERATIVE ACTIVITIES

00.1 Enforcement and Compliance with Environmental Legislation

Background

Pursuant to Article 5 of the Canada Chile Agreement on Environmental Cooperation (CCAEC), "each Party shall effectively enforce its environmental laws and regulation through appropriate government action". To this end, as per Article 10(5), the Council shall encourage enforcement by each Party of its environmental laws and regulations, compliance with those laws and regulations and technical cooperation between the Parties". Under Article 10 (2) (n),(o) and(p), the Council may consider and develop recommendations regarding human resource training and development in the environmental field; the exchange of environmental scientists and officials; and approaches to environmental compliance and enforcement.

General Objectives

The general objectives of the program are to strengthen the effectiveness of environmental enforcement and compliance activities in Chile and Canada, by providing a forum for the exchange of information and experiences on environmental enforcement and compliance policies, tools and practices, and to support access to information on environmental data, and to enhance environmental monitoring.

Activities

00.1.1 (cont.99.1.1) Enforcement and Compliance Report

The Agreement identifies a broad range of possible enforcement actions governments may employ to achieve compliance with environmental laws and regulations. In order to foster and maintain a good understanding of how each government is enforcing its environmental laws and regulations, the National Secretariats will update, as appropriate, the content of the report entitled "Environmental Enforcement and Compliance Frameworks in Canada and Chile. This report is a vehicle for sharing information on inspection functions, constitutional and legislative context, enforcement policies and tools, and compliance promotion.

Time frame: The report is available in hard copy as well as on the web sites of the National Secretariats. The electronic update will be available by July 2001 in the three official languages of the CCAEC (English, French and Spanish).

Cost: $2,000

Expected results: A report on current environmental enforcement and compliance policies and practices in Canada and Chile

00.1.2 Implementation of Basel Convention

The primary objective of the Basel Convention is to limit and control the transboundary movement of hazardous waste. Under this project, information will be exchanged regarding the implementation of the Basel Convention in Canada and Chile, and Chilean public officials will be trained in the effective implementation of the Convention.

Proposed activities under this project follow. Chilean officials from the National Customs Services and the Health Ministry will visit Revenue Canada and Environment Canada in Ottawa in August 2000 in order to familiarize themselves with the Canadian implementation of the Convention. (Visit to a regional customs border site such as Sarnia or Niagara where waste related inspections in accordance with the Basel Convention are carried out.)

In addition, they will also analyze a proposal for a regular exchange of statistical information regarding the movement of goods between both countries which may be characterized as hazardous waste.

In addition, training of Chilean officials from the Health Ministry, the National Customs Service and the National Commission for the Environment (CONAMA), with respect to the Basel Convention and the environmental management of industrial solid wastes, will be conducted by Revenue Canada and Environment Canada officials.

Time Frame: Technical visit in August 2000 and training in early 2001

Estimated cost: $20,000

Expected results: Better enforcement of legislation related to the transboundary movement of hazardous waste.

00.1.3 National Enforcement Management Information System and Intelligence Systems (NEMISIS)

In 1997, Environment Canada successfully implemented the first phase of the National Enforcement Management Information System and Intelligence Systems (NEMISIS). This is a new electronic information data base for tracking and managing the department's enforcement activities under federal environmental and wildlife legislation enforced by Environment Canada (EC). As a management tool, NEMISIS can be used to monitor trends, set priorities and prepare regular and special purpose reports. It is available to inspectors, investigators, wildlife officers and managers to record all pertinent information related to occurrence reports, inspections and investigations.

The object of this joint project is to assess the possibility of transferring NEMISIS to Chile in order to enhance the ability of CONAMA to provide the types of statistical and

compliance information that is regularly requested by the public, the media and interested groups. It should also enable CONAMA to adopt and implement common definitions for enforcement activities across the five regions and its headquarters. .

Time frame: November 2000

Estimated cost:

Expected results: Evaluation and recommendation regarding the transfer of NEMISIS to Chile

00.2 **Participation of civil society in environmental management**

Background

The promotion of transparency and public participation in environmental management are two other objectives of the CCAEC. Article 10 (6)(a) directs the Council "to promote and, as appropriate, develop recommendations regarding public access to information concerning the environment that is held by public authorities of each Party, including information on hazardous materials and activities in its communities, and opportunity to participate in decision-making processes related to such public access".

A number of articles of the CCAEC address directly and indirectly public participation and education in environmental matters, including environmental laws and policies.

General Objectives

The general objectives of this section of the work program are to enhance the participation of civil society in environmental management and to promote environmental citizenship in both countries. Projects in this area will facilitate the exchange of information and experiences between non-governmental as well as governmental organizations on a wide variety of topics, including public participation initiatives in Canada and Chile, the CCAEC cooperative activities, and environmental legislation.

Activities

00.2.1 Public Participation Report

In 1999, the National Secretariats coordinated the preparation of a report on existing models, mechanism and tools for public participation in environmental issues in Canada and Chile. This study entitled "Public Participation in Environmental Management in Canada and Chile" is now available on the Internet and in hard copy format. The National Secretariats are responsible for updating the report on an annual basis.

Time frame: The annual update will be ready by July 2001 and available on the National Secretariats' websites.

Estimated cost: $2,000

Expected results: A report containing up to date information on the state of public participation in environmental management in Canada and Chile .

00.2.2 (cont.99.2.2) Workshop on Public Participation

Based on the findings of the report "Public Participation in Environmental Management in Canada and Chile" (project 99.2.1), which identified policies and methods to promote public participation in the two countries, the Joint Public Advisory Committee will coordinate the organization of a joint seminar on "Public Participation in Environmental Decision Making".

The objectives of this initiative are: to discuss public participation as a means of improving environmental management; to agree on basic concepts related to public involvement; and to identify concrete cooperative activities to enhance public participation. Representatives of all sectors of society will be invited to participate.

Time frame: The workshop is scheduled to take place at the end of September 2000 in Chile.

Estimated cost: $22,000 and National Secretariats and JPAC staff time.

Expected results: A series of suggestions on national and cooperative activities to enhance public participation in environmental decision making in Canada and Chile.

00.2.3 (cont.99.2.3) Action at the Community Level Webpage

The CCAEC recognizes the contribution of civil society to sound environmental management and the importance of local initiatives to protecting the environment. This project is designed to facilitate the exchange of information on examples of community action; to share best practices on programs, tools and policies; to encourage public involvement; and, to facilitate the establishment of direct contacts between groups and individuals in the two countries.

A web-page was created under the 1999 Annual Program which highlighted national community level programs in the two countries. It will be extended to include more initiatives at the local and regional levels. Other departments, communities, non-governmental organizations, as well as other interested groups, will be invited to provide information on current initiatives to be added to the site.

Time frame: The webpage will be updated prior to the Third Council Session.

Estimated cost: $2,000

Expected results:. Enhanced awareness by Canadian and Chilean communities of programs undertaken at the local level in both countries

00.2.4 (cont. 99.2.4) CCAEC Websites

Each National Secretariat has created its own internet site on the CCAEC. These sites provide the general public access to the official text of the Agreement, activities of the Commission for Environmental Cooperation, joint cooperative projects, and associated documents and publications. The National Secretariats work together to ensure parallel development and maintenance of the sites, and similar structure and content

Time frame: The Internet sites will continue to be maintained on a regular basis.

Estimated cost: National Secretariats' staff time and outside contractor (Canada) estimated at $4,000 per year.

Expected results: The general public has access to current electronic information in the three official languages of the Agreement on the CCAEC and the Commission at the following internet addresses: http://can-chil.gc.ca and http://www.CONAMA.cl/chile-canada/

00.2.5 (cont.99.2.5) Environmental law and Regulations Database

The objective of this project is to provide easy access to current Canadian and Chilean environmental legislation. A database containing full listing and legal references, as well as summaries of federal and national environmental laws and regulations in effect in the two countries with hotlinks to full text on line was created under the 1999 Annual Program.

Over the next year, work to complete and expand the databases will be continued. The welcome pages, navigation's bars, general references pages and summaries of acts and regulations administered by Environment Canada and CONAMA will be translated into the three official languages of the Agreement.

The site will also include legislation managed by other departments and other levels of government, and hyperlinks to recent publications on legal and regulatory issues. Canada will add a function to its database for regular updates by the responsible programs within the Department.

Time frame: CONAMA and Environment Canada will continue to develop and update that database on an ongoing basis.

Estimated cost: CONAMA and Environment Canada staff time, and translation costs of $4,000

Expected results: The general public will have internet access to current Canadian and Chilean environmental legislation through the National Secretariats' websites at http://can-chil.gc.ca and http://www.conama.cl/chile-canada, as well as through Environment Canada and CONAMA websites.

00.2.6 Pollutant Release and Transfer Register

The objectives of the project is to assess the feasibility for a Pollutant Release and Transfer Register (PRTR) system in Chile and to enhance Canada's National Pollutant Release Inventory (NPRI) through a joint project with Chile and United Nations Institute for Training and Research (UNITAR). This project is intended to promote public participation and to facilitate access to information on the quality of the environment. In addition, it has been demonstrated that PRTRs can contribute to reducing emissions of pollution to air, water and land, and promote effective environmental management overall.

The project will involve an initial workshop on Pollutant Release and Transfer Registers (PRTR's) in Chile in early 2001, which will include all affected and interested parties from both public and private sectors. The workshop will make use of the practical experience gained through the Canadian national and other PRTR programs, the

UNITAR's standard guidance and training materials and Chile's experience with emissions inventories work.

Time frame: The two-day workshop will be held in early 2001 in Chile

Estimated cost: $30,000

Expected results: A national PRTR workshop report that outlines the benefits and challenges of a national PRTR system in Chile.

00.3 Trade and the Environment

Background

Several articles of the CCAEC address trade and environment issues, including Article 1 and Article 10(7). These stipulate that the Agreement should support the environmental goals and objectives of the Canada Chile Free Trade Agreement while avoiding the creation of trade distortions or new trade barriers, and that the Agreement should promote economically efficient and effective environmental measures.

It is generally accepted that free trade, by generating increased wealth, can raise levels of environmental protection. However, trade liberalization, by increasing economic activity, may also result in adverse effects on the environment. To avoid these adverse consequences, effective environmental management must accompany trade liberalization.

The relationship between trade and the environment has been the subject of debate and analysis in diverse fora, particularly in recent years. Given its increasing importance on the international agenda, Canadian and Chilean representatives decided that a useful means of supporting the environmental goals of the CCFTA, would be to jointly analyze and discuss trade and environment issues of common interest. A more in-depth, shared understanding of some key issues would benefit the bilateral relationship, and could lead to the sharing of positions in other fora.

General Objective

The primary objective is to establish and maintain a constructive and collaborative dialogue on trade and environment in the context of the CCAEC, in the trade liberalization process underway in the Americas, and in the broader debate at the international level.

Activities

00.3.1 Round table on Trade and Environment

A permanent round table consisting of Canadian and Chilean environment and foreign affairs departments representatives working on trade and environment issues will be established. Academic, business and NGO representatives will be invited to participate in the discussions, where appropriate. The creation of a round table is intended to facilitate the exchange of information, experiences and points of view on the trade and environment relationship, and to explore potential areas of cooperation.

The following are possible topics for exploration: the precautionary approach, the relationship between the World Trade Organization (WTO) and multilateral environmental agreements (MEA), certification and eco-labelling, methodologies for the environmental assessments of free trade agreements, dispute settlement issues (WTO, multilateral environmental agreements, NAFTA),biodiversity and synergies between trade liberalization and environmental protection.

Time frame: The first working session will take place in Santiago, Chile, in the fall of 2000. The Round table is expected to meet bi-annually.

Estimated cost: $ 30,000

Expected results: Better shared understanding of the impacts of trade liberalization on the environment, and a better understanding of respective position

00.3.2 Additional possible project

A project of common interest and where further research is warranted might be identified as a result of the discussions of the trade and environment Round table. The project would need to contribute to key aspects of the bilateral trade between Canada and Chile, or be of direct relevance to hemispheric trading arrangements.

Estimated cost: max: $10,000

BUDGET

1. Cooperative activities

Estimated costs related to the implementation of the various projects are as follows:

Project no	Project title	Total Estimated cost* CH pesos (million)	CDN dollars (thousand)
00.1	**Enforcement and compliance**		
00.1.1	Enforcement and compliance Report	0.7	2
00.1.2	Implementation of Basel Convention	7	20
00.1.3	NEMISIS	1.75	5
00.2	**Public Participation**		
00.2.1	Public Participation Report	0.7	2
00.2.2	Workshop on Public Participation	7.7	22
00.2.3	Action at the Community Level Webpage	0.7	2
00.2.4	CCAEC websites	1.4	4
00.2.5	Environmental Law and Regulation Database	1.4	4
00.2.6	Pollutant Release and transfer Register	10.5	30
00.3	**Trade & Environment**		
00.3.1	Roundtable	10.15	29
00.3.2	Additional possible projects	3.5	10
TOTAL		**45.5**	**130**

*The estimated costs in table have been cumulated and indicated in each country's currency.

2. The Joint Public Advisory Committee (JPAC)

All expenses related to supporting the activities of the JPAC will be shared by the two parties according to the Rules of procedure for the JPAC and the National Secretariats. Expenses include the reimbursement of travel expenses of JPAC members, organization of their meetings, translation of documents and simultaneous translation, as required. Administrative, technical and operational support will be provided by the two National Secretariats.

3. The Joint Submission Committee (JSC) and Experts in Environmental Matters

Each Party will ensure that funds are available to handle submissions on enforcement matters as required. Costs associated with the work of the Joint Submission Committee and the preparation of factual records will be equally shared by the two countries, administrative support will be provided by the National Secretariats.

Accord de coopération environnementale
Acuerdo de Cooperación Ambiental
Agreement on Environmental Cooperation

THIRD WORK PROGRAM (2002)
PRELIMINARY VERSION

CANADA-CHILE COMMISSION FOR ENVIRONMENTAL COOPERATION

THIRD WORK PROGRAM (2002)

PRELIMINARY VERSION

INTRODUCTION

One of the main objectives of the Canada-Chile Agreement on Environmental Cooperation (CCAEC) is to promote environmental cooperation between the two Parties.

The present work program of the Commission for Environmental Cooperation covers the period between the third and fourth Sessions of the Council. It takes into account previous and current cooperative activities between the two countries.

In order to achieve the objectives of the CCAEC and help fulfill the obligations of the Parties, the third work program of the Commission focuses on four priority areas:

1. Environmental Enforcement and Compliance;
2. Participation of Civil Society in Environmental Management;
3. Trade and the Environment; and
4. Health and Environment.

In March and April of 2001, Hemispheric leaders at the Summit of the Americas and Environment Ministers at the Meeting of Environment Ministers of the Americas acknowledged the need to build stronger bridges between environment and health sectors. Canada and Chile have chosen to respond to this encouragement by adding the fourth priority area, "*Health and Environment*" to the work program.

This work program is intended to build on the joint work done over the last few years in the two countries and to produce concrete results. The activities proposed for this third program are designed to strengthen environmental protection in the two countries, to encourage the dissemination of information and to facilitate the establishment of networks among government officials, professionals, researchers and organizations sharing similar interests. The National Secretariats will continue to coordinate the implementation of the various projects. Experts and relevant organizations in both countries will be invited to assist in the delivery of the approved activities. Expenses related to project implementation will be shared between the two governments.

Information on the results achieved under this third work program will be reviewed in the fourth annual report on the CCAEC which will be presented to Council at its Fourth Regular Session.

COOPERATIVE ACTIVITIES

Theme One: Enforcement and Compliance with Environmental Legislation

Background

Pursuant to Article 5 of the Canada Chile Agreement on Environmental Cooperation (CCAEC), "each Party shall effectively enforce its environmental laws and regulation through appropriate government action". To this end, as per Article 10(5), the Council shall encourage enforcement by each Party of its environmental laws and regulations, compliance with those laws and regulations and technical cooperation between the Parties". Under Article 10 (2) (n),(o) and(p), the Council may consider and develop recommendations regarding human resource training and development in the environmental field; the exchange of environmental scientists and officials; and approaches to environmental compliance and enforcement.

General Objectives

The general objectives of the program are to strengthen the effectiveness of environmental enforcement and compliance activities in Chile and Canada, by providing a forum for the exchange of information and experiences on environmental enforcement and compliance policies, tools and practices, and to support access to information on environmental data, and to enhance environmental monitoring.

Activities

02.1.1 National Enforcement Management Information System and Intelligence Systems (NEMISIS) Phase II

This project also builds on work begun in the previous work program under project number 00.1.3. During the first phase officials from Environment Canada visited Chile to demonstrate the features of Canada's National Enforcement Management Information System and Intelligence Systems (NEMISIS). This is a new electronic information data base for tracking and managing the department's enforcement activities under federal environmental and wildlife legislation enforced by Environment Canada (EC). As a management tool, NEMISIS can be used to monitor trends, set priorities and prepare regular and special purpose reports. It is available to inspectors, investigators, wildlife officers and managers to record all pertinent information related to occurrence reports, inspections and investigations.

Under this phase, CONAMA will conduct an internal feasibility study. This study will aim to assess the applicability of NEMISIS in the Chilean context and will identify all considerations that will need to be taken into account to successfully transfer the platform to Chile. The study will estimate costs involved in modifying the system for

Chile and will outline necessary modifications. Canadian officials and technicians will provide advice and support to Chilean officials during the preparation of this study.

Time frame: July-September 2002

Estimated cost: In-kind contribution of CONAMA and Environment Canada officials.

Expected results:

- Analysis of the feasibility of transferring the platform to Chile

Theme Two: Participation of civil society in environmental management

Background

The promotion of transparency and public participation in environmental management are two other objectives of the CCAEC. Article 10 (6)(a) directs the Council "to promote and, as appropriate, develop recommendations regarding public access to information concerning the environment that is held by public authorities of each Party, including information on hazardous materials and activities in its communities, and opportunity to participate in decision-making processes related to such public access".

A number of articles of the CCAEC address directly and indirectly public participation and education in environmental matters, including environmental laws and policies.

General Objectives

The general objectives of this section of the work program are to enhance the participation of civil society in environmental management and to promote environmental citizenship in both countries. Projects in this area will facilitate the exchange of information and experiences between non-governmental as well as governmental organizations on a wide variety of topics, including public participation initiatives in Canada and Chile, the CCAEC cooperative activities, and environmental legislation.

Activities

02.2.1 Policy Forum on Public Participation in Environmental Management

Building on the results of the reports on public participation (1999 and 2001) as well as the Workshop on Public Participation (project number 00.2.2) that occurred in October of 2000, Parties have agreed to hold a workshop on Best Practices in Canada to discuss key issues and state of the art approaches to promoting and enhancing effective public participation in environmental management.

This workshop will showcase a variety of Government of Canada and Environment Canada public participation initiatives. Participants will include representatives from CONAMA as well as representatives from Chile's NGO and academic communities.

Time Frame: The Policy Forum would take place prior to the 4th Session of the Council.

Estimated Costs: This project will require significant in-kind contributions from Environment Canada and CONAMA officials. The costs of travel for the Chilean delegation (Cdn$20,000) will be shared between CONAMA and Environment Canada.

Expected Results:

- Exchange of information on key policy issues
- Improved awareness of techniques and approaches to public participation

02.2.2 Pollutant Release and Transfer Register

The objectives of the project is to assess the feasibility for a Pollutant Release and Transfer Register (PRTR) system in Chile and to enhance Canada's National Pollutant Release Inventory (NPRI) through a joint project with Chile and United Nations Institute for Training and Research (UNITAR). This project is intended to promote public participation and to facilitate access to information on the quality of the environment. In addition, it has been demonstrated that PRTRs can contribute to reducing emissions of pollution to air, water and land, and promote effective environmental management overall.

The project was included in the 2000-2001 work program (project number 00.2.6). It was originally scheduled to take place in October of 2001 but was postponed as a result of the events of September 11th. This workshop will occur in Chile in early 2002. It will involve an initial workshop on Pollutant Release and Transfer Registers (PRTR's) in Chile which will include all affected and interested parties from both public and private sectors. The workshop will make use of the practical experience gained through the Canadian national and other PRTR programs, the UNITAR's standard guidance and training materials and Chile's experience with emissions inventories work.

Time frame: The two-day workshop will be held in early 2002 in Chile

Estimated cost: $30,000

Expected results: A national PRTR workshop report that outlines the benefits and challenges of a national PRTR system in Chile.

02.2.3 Dissemination of Information on Environmental Management

Recognizing that access to information on environmental issues is fundamental to effective public participation in environmental management. The Canada-Chile Commission agreed to update and continue activities that were part of previous work programs as appropriate. These activities include:

CCAEC Websites (past activities 00.2.4 and 99.2.4)

- Each National Secretariat has created its own internet site on the CCAEC. These sites provide the general public access to the official text of the Agreement, activities of the Commission for Environmental Cooperation, joint cooperative projects, and associated documents and publications. The National Secretariats work together to ensure parallel development and maintenance of the sites, and similar structure and content
- The website can be found in the three languages of both Parties at:
  http://can-chil.gc.ca
  http://www.conama.cl/chile-canada

Action at the Community Level Webpage (past activities 00.2.3 and 99.2.3)

- A web-page was created under the 1999 Annual Program highlighting national community level programs in the two countries.

Environmental law and Regulations Database (past activities 00.2.5 and 99.2.5)

- The objective of this project was to provide easy access to current Canadian and Chilean environmental legislation. A database containing a full listing and legal references, as well as summaries of federal and national environmental laws and regulations in effect in the two countries with hotlinks to full text on line is maintained on the Canada-Chile website.

Enforcement and Compliance Report (past activities 00.1.1 and 99.1.1)

- In order to foster and maintain a good understanding of how each government is enforcing its environmental laws and regulations, the National Secretariats will regularly update and post on the website the content of the 1999 and 2001 reports entitled "Environmental Enforcement and Compliance Frameworks in Canada and Chile". This report is a vehicle for sharing information on inspection functions, constitutional and legislative context, enforcement policies and tools, and compliance promotion.

Estimated cost: $15,000

Expected results:.

- Enhanced awareness by Canadian and Chilean communities of programs undertaken at the local level in both countries
- Public access to current electronic information in the three official languages of the Agreement on the CCAEC and the Commission
- Improved access to information about Chile's environmental management system for Canadians and vice versa.

Theme Three: Trade and the Environment

Background

Several articles of the CCAEC address trade and environment issues, including Article 1 and Article 10(7). These stipulate that the Agreement should support the environmental goals and objectives of the Canada Chile Free Trade Agreement while avoiding the creation of trade distortions or new trade barriers, and that the Agreement should promote economically efficient and effective environmental measures.

It is generally accepted that free trade, by generating increased wealth, can raise levels of environmental protection. However, trade liberalization, by increasing economic activity, may also result in adverse effects on the environment. To avoid these adverse consequences, effective environmental management must accompany trade liberalization.

The relationship between trade and the environment has been the subject of debate and analysis in diverse fora, particularly in recent years. Given its increasing importance on the international agenda, Canadian and Chilean representatives decided that a useful means of supporting the environmental goals of the CCFTA, would be to jointly analyze and discuss trade and environment issues of common interest. A more in-depth, shared understanding of some key issues would benefit the bilateral relationship, and could lead to the sharing of positions in other fora.

General Objective

The primary objective is to establish and maintain a constructive and collaborative dialogue on trade and environment in the context of the CCAEC, in the trade liberalization process underway in the Americas, and in the broader debate at the international level.

Activities

02.3.1 Round Table on Trade and Environment

A permanent Round Table on Trade and Environment issues was established in the previous work program (project number 00.3.1). Each Round Table consisted of governmental and public portions. The governmental portion allowed Canadian and Chilean officials from environment and foreign affairs departments to discuss key policy developments and positions. The public portion invited academic, business and NGO representatives to participate in a discussion on key themes. The first three themes of the series were: precaution; environmental assessments of free trade agreements; and certification.

Parties have agreed to continue the Round Tables and their format. The round tables are intended to facilitate the exchange of information, experiences and points of view on the trade and environment relationship, and to explore potential areas of cooperation.

Time frame: It is anticipated that two Round Tables will be held during the period between the Third and Fourth Council Sessions. The timing of these tables will attempt to take advantage of international meetings.

Estimated cost: $ 20,000

Expected results: Better shared understanding of the impacts of trade liberalization on the environment, and a better understanding of respective positions.

Theme Four: Health and the Environment

Background

Environmental challenges such as air pollution, the management and transport of hazardous substances, the misuse of pesticides, the thinning of the ozone layer and climate change have tangible impacts on human health. Human health can therefor be a significant driver for action on a variety of environmental issues. Unfortunately, the division of responsibilities across Ministries does not always allow for effective engagement to address environmental issues that have a direct effect on human health. It was with this in mind, that hemispheric leaders at the Summit of the Americas and Environment Ministers at the Meeting of Environment Ministers of the Americas in northern spring of 2001acknowledged the need to build stronger bridges between environment and health sectors.

As a result, Canadian and Chilean officials agreed to cooperate in activities that will improve mechanisms that facilitate the discussion, coordination and collaboration between Health and Environment Ministries in the area of Health and Environment.

Several articles of the CCAEC stress the importance of fostering the protection and improvement of the environment for the well-being of present and future generations and cooperating in areas related to the strengthening of environmental policies, practices and procedures. Furthermore, the Agreement obliges each Party to effectively enforce its environmental laws and regulations. Because the definition of environmental law in Article 44 paragraph 2 (a), includes any statue or regulation with the primary purpose to protect the environment, or prevent danger to human life or health through the control of pollutant or toxic emissions or the protection of wildlife and natural areas, both the Chilean Ministry of Health and Health Canada administer and enforce environmental laws in conjunction with CONAMA and Environment Canada respectively.

General Objective

The primary objective of the project is to strengthen the existing capacities in both countries to develop and implement policies and regulations in the area of health and environment.

Secondary objectives include building links between health and environment policy-makers in Chile and Canada and identifying areas of future cooperation.

Activities

02.4.1 Policy Forum on Health and Environment

As mentioned above, establishing a clear link between environmental problems and their impact on health is a very effective driver for action. A mechanism to discuss, coordinate and collaborate on policy development in the area of health and the environment cannot be overstated. Under this project, Chilean and Canadian government officials from both health and environment sectors will hold a policy forum to discuss key emerging issues in the area of health and environment.

Time frame: The Policy Forum will be held before the Fourth Council Session. The timing of this Forum will attempt to take advantage of international meetings which involve health and environment officials.

Estimated cost: $ 20,000

Expected results:

- Improved understanding of how health and environmental issues are coordinated in each country
- Improved inter-sectoral cooperation at national levels
- Close examination of relevant and emerging topics in the area of health and environment
- Generation of potential themes or projects for future cooperation and discussion

02.4.2 Implementation of Basel Convention

The primary objective of the Basel Convention is to limit and control the transboundary movement of hazardous waste. This project advances the work that was conducted in the second work program (2000-2001) under project number 00.1.2. During the first phase of the project, a Chilean delegation representing the three institutions mentioned above, visited Canada with the purpose of acquainting themselves with Canadian progress in implementing the Convention. The delegation met with Canadian officials responsible for the enforcement of transboundary movement of hazardous waste and witnessed a site inspection at a border facility.

In Phase II of the project, a workshop will be held in Chile to assist Chilean officials in the implementation of their commitments under the Basel Convention and the environmental management of hazardous wastes. The workshop will include presentations describing the Canadian experience in implementing the Basel Convention looking at both regulatory and administrative systems as well as enforcement. The workshop will also include a presentation on the current system in Chile followed by an informal discussion on the possible steps that could be taken by Chile to improve their implementation of Convention obligations.

Time Frame: Workshop to occur before the end of 2002.

Estimated cost: $25,000

Expected result:

- Exchange of information to promote the implementation of the Convention in Chile

BUDGET

1. Cooperative activities

Estimated costs related to the implementation of the various projects are as follows:

Project no	Project title	Total Estimated cost*	
		CH pesos (million)	CDN dollars (thousand)
02.1	**Enforcement and compliance**		
02.1.1	NEMISIS Phase II		
02.2	**Public Participation**		
02.2.1	Workshop on Best Practices in Public Participation	8.5	20
02.2.2	Pollutant Release and Transfer Registry	12.7	30
02.2.3	Dissemination of Information on Environmental Management	6.35	15
02.3	**Trade & Environment**		
02.3.1	Trade & Environment Roundtable	8.5	20
02.4	**Health & Environment**		
02.4.1	Health & Environment Policy Forum	8.5	20
02.4.2	Implementation of Basel Convention	10.6	25
TOTAL		**55.15**	**130**

*The estimated costs in table have been cumulated and indicated in each country's currency.

2. The Joint Public Advisory Committee (JPAC)

All expenses related to supporting the activities of the JPAC will be shared by the two parties according to the Rules of procedure for the JPAC and the National Secretariats. Expenses include the reimbursement of travel expenses of JPAC members, organization of their meetings, translation of documents and simultaneous translation, as required. Administrative, technical and operational support will be provided by the two National Secretariats.

3. The Joint Submission Committee (JSC) and Experts in Environmental Matters

Each Party will ensure that funds are available to handle submissions on enforcement matters as required. Costs associated with the work of the Joint Submission Committee and the preparation of factual records will be equally shared by the two countries, administrative support will be provided by the National Secretariats.

CANADA-CHILE AGREEMENT ON
ENVIRONMENTAL COOPERATION

ENVIRONMENTAL ENFORCEMENT AND COMPLIANCE FRAMEWORKS IN CANADA AND CHILE

December, 1999

Environmental Enforcement and Compliance Frameworks in Chile and Canada

TABLE OF CONTENTS

			Pages
A.	**INTRODUCTION**		1
B.	**OVERVIEW - CANADA**		2
	1.1	Constitutional Context	2
	1.2	Federal Environmental Laws and Commitments	2
	1.3	Enforcement Structure and Operations	4
	1.4	Enforcement Philosophy and Approach	7
	1.5	Compliance Promotion	8
	1.6	Inspection Planning	9
	1.7	Enforcement Tools	9
	1.8	Policies	10
	1.9	Compliance Indicators	11
	1.10	Training	12
	1.11	Special Initiatives: Enforcement Review Process	13
	1.12	New Features: NEMISIS	13
C.	**OVERVIEW - CHILE**		15
	1.0	Constitutional and Legal Background	15
	2.0	Institutional Background	15
	2.1	Law 19.300 in the General Environmental Law (LBMA)	15
	2.2	The National Commission for Environment (CONAMA) and Regional Commissions for Environment (COREMAS)	16
	3.0	Regulation, Control and Enforcement of Environmental Legislation	17
	3.1	Institutional Framework	17
	3.2	Methodology	20
	3.3	Procedures and Plans or Programs for Compliance with Environmental Legislation	22
	4.0	Compliance with Environmental Legislation in Chile: towards an comprehensive approach	23
D.	**CONCLUSION**		25
E.	**ANNEXES**		26

A. INTRODUCTION

In July 1997 the *Canada-Chile Free Trade Agreement* entered into force, along with an environmental side agreement, the *Canada-Chile Agreement on Environmental Cooperation (CCAEC)*. The CCAEC is intended to ensure that enforcement of domestic pollution and wildlife laws go hand in hand with economic growth and trade between the two countries. Key objectives of the CCAEC include:

- increased cooperation between the Parties to better conserve, protect, and enhance the environment, including wild flora and fauna;
- strengthened cooperation on the development and improvement of environmental and wildlife laws, regulations, procedures, policies, and practices;
- enhanced compliance with, and enforcement of, environmental and wildlife laws and regulations; and
- promotion of pollution prevention policies and practices.

This report was prepared to facilitate the exchange of information on the enforcement structures and activities currently in place in Canada and Chile. Both countries prepared their own section for this report, and contributed to the introduction and conclusion sections.

At present, Canada and Chile are reviewing and undertaking improvements to their environmental laws and responsible enforcement agencies, and some of the information presented here may change in the near future. For example, Canada is currently undertaking fifteen special projects that target means for improving the effectiveness and efficiency of its environment and wildlife enforcement program. And in Chile, implementation has begun for a Coordinated Enforcement Program under the Environmental Impact Assessment System that includes the participation of approximately 15 state departments that share environmental responsibilities.

Each country has striven to address the following enforcement subject areas in this report: constitutional and legislative frameworks, enforcement structures, operations, methodologies, approaches, and implementation tools and policies. Chile is continuing to assemble information on these matters and will make details available as they are completed. The annexes contain a list of key environmental enforcement organizations in both countries.

Additional information on the *Canada-Chile Agreement on Environmental Cooperation* and enforcement activities can be accessed through the National Secretariats web sites at: http://can-chil.gc.ca and http://www.conama.cl/chile-canada, and from Environment Canada's web site at: www.ec.gc.ca and CONAMA's web site at: http://www.conama.

B. OVERVIEW - CANADA

1.1 Constitutional Context

In Canada, federal, provincial and territorial governments share legislative and regulatory authority over the protection and management of the environment, wildlife and its habitat. Each order of government passes its own laws and makes regulations, and exercises its powers under these laws including enforcement. The focus of this report is on the enforcement responsibilities of the federal Department of the Environment, also referred to as Environment Canada (EC).

Federal environmental responsibilities include but are not limited to fisheries, migratory birds, the international trade and commerce in hazardous wastes, ODS and wildlife, the use and release of restricted substances, and the negotiation and implementation of international accords. Key provincial and territorial environmental responsibilities include the management of natural resources and protection of wildlife within their boundaries, and the control of negative environmental impacts arising from local works and activities.

The shared nature of environmental jurisdiction makes close cooperation between the federal, provincial and territorial governments vital to the success of national environmental and wildlife management policies and objectives. Ministerial councils have been set up to facilitate this cooperation. The Canadian Council of Ministers of the Environment (CCME), for example, is composed of federal, provincial and territorial Ministers responsible for environmental protection. Acting as equal partners, Ministers use the Council to coordinate policies and actions, to resolve inter-jurisdictional problems, and to exchange information. Similarly, the Wildlife Ministers Council of Canada (WMCC) does the same with respect to wildlife issues.

Enforcement of environmental and wildlife legislation at all levels of government is conducted within the context of the Canadian legal framework that includes the *Canadian Charter of Rights and Freedoms*, the *Criminal Code*, the *Privacy Act*, and the *Canada Evidence Act*. Most environmental and wildlife legislation in Canada provide for the right to search, seize, and detain under the rules established by legislation.

1.2 Federal Environmental Laws and Commitments

Canada is party to several international agreements, treaties or conventions whose purpose is to protect the environment and wildlife. The commitments pertain to a variety of issues and include the following:

- Convention on International Trade in Endangered Species of Flora and Fauna (CITES)
- Basel Convention (on the international trade of hazardous wastes)

- Montreal Protocol (calling for scheduled reduction in ozone-depleting substances)
- UN Convention on Long-Range Transboundary Air Pollution (LRTAP)
- Convention on Biological Diversity

In addition to the above, Canada is subject to several trade agreements that contain items or have side agreements pertaining to environmental protection or that otherwise impact environmental governance, for example: the Canada-Chile Free Trade Agreement (CCFTA) and the North American Free Trade Agreement (NAFTA).

Canada fulfils its international and domestic environmental and wildlife commitments through a host of legislation and regulations. Some of the key laws administered at the federal level are the following:

- *Canadian Environmental Protection Act* (*CEPA*), 1988
- *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act, (WAPPRIITA)*, 1996
- *Migratory Birds Convention Act (MBCA)*, 1994
- *Fisheries Act (FA)*, 1985
- *Canada Wildlife A*ct (CWA), 1994
- *Transportation of Dangerous Goods Act (TDGA)*, 1992

These Acts and others are implemented through numerous regulations. For instance, there are approximately 26 regulations under *CEPA* pertaining to matters such as pollution prevention, management of toxic substances, fuels, vehicle and engine emissions, international air and water pollution, waste disposal at sea, environmental emergencies, biotechnology, and enforcement.

Federal laws and regulations are implemented through a comprehensive compliance promotion and enforcement program that is the focus of this report. However, two other environmental protection tools are worthy of note that help to define Canada's environmental management framework: the *Canadian Environmental Assessment Act* (CEAA) and the Green Government initiative.

The purpose of *CEAA* is to ensure that potential environmental effects are carefully considered where the federal government is initiating, funding, granting land towards, or exercising approval authority over a proposed undertaking. The Act requires the responsible government authority to assess the potential impact of the proposal on the environment, and to consult as necessary with other federal departments to seek input on relevant laws and regulations.

The Green Government initiative applies to on-going government operations and was developed to ensure that federal activities meet federal environmental and wildlife laws and standards, and serve as an example to Canadians and the Canadian business community. A group within the Enforcement Program is tasked with promoting government compliance with existing federal environmental laws, and bringing government into compliance with new laws as they are promulgated.

1.3 Enforcement Structure & Operations

Enforcement of environmental and wildlife laws is a shared responsibility among numerous federal, provincial and territorial authorities, and is undertaken in cooperation with counterpart authorities in other countries, and with international agencies. Federally, the Departments of Environment, Health, the Attorney General, Justice, the Royal Canadian Mounted Police (R.C.M.P.), Revenue Canada (Customs) all play an important role. Figure 1 illustrates the responsibilities and relationships between the key parties involved in enforcement.

FIGURE 1: SUMMARY OF ENFORCEMENT RESPONSIBILITIES

Within Environment Canada the enforcement program is administered through a headquarters Enforcement Branch, and five administrative Regional Offices that are responsible for day to day enforcement activities.

The **Enforcement Branch** consists of the Reporting & Information Management Division, the Enforcement Management Division (training), the Compliance Assurance Division, the Inspection and Investigation Division, and the Regulatory and Development Division.. Branch headquarters are located in the nation's capital.

The Enforcement Branch is responsible for providing overall national, functional direction for coordination of operations; developing and monitoring the annual National Inspection Plan; developing and administering enforcement training courses; reviewing

new regulations and proposed changes to existing regulations; and coordinating international operations, amongst other duties.

Responsibilities of the Reporting & Information Management Division include developing and maintaining a national enforcement information system (NEMISIS); preparing annual and specialized reports on enforcement and compliance; and coordinating data/information on enforcement actions.

The Enforcement Management Division designs and delivers a variety of specialized courses to ensure that inspectors, investigators and wildlife officers are well equipped for the special needs of the job. Training is provided to Environment Canada employees as well as partner staff from other federal departments, provincial enforcement agencies, and foreign enforcement agencies. The Division also helps to prepare materials such as guides, procedures, policies and memoranda of understanding.

Compliance Assurance Division responsibilities include developing and implementing innovative ways to motivate compliance at federal facilities; strengthening procedures and processes to support compliance in the federal government; and leading or coordinating selected activities relative to the federal greening of government initiative.

The Regulatory Development Division ensures that new regulations are enforceable, the Division also prepares enforcement strategies.

The Inspection and Investigation Division is responsible for the preparation of the annual inspection plan and provides support to the regions in giving advice on regional inspections and investigations.

Divided amongst the five Regional Offices (Atlantic, Quebec, Ontario, Prairie and Northern, Pacific and Yukon), there are approximately twenty district offices, responsible for implementation of the national enforcement program. Roughly 125 staff operating from headquarters and regional offices carry out local enforcement functions. These include inspectors, inspection specialists, and enforcement officers.

Inspectors have the most frequent and regular contact with the companies, individuals and government agencies affected by environmental legislation. Inspectors have four main roles:

- carry out inspections to verify compliance with the law;
- review options for preventive and corrective action, including warning of potential violations;
- direct that corrective measures be taken in an emergency, where there is danger to the environment, human life or health, caused when the unauthorized release of a regulated substance has occurred or is about to occur; and
- participate in investigations to obtain evidence of violations.

Investigation Specialists have expertise in specific regulatory areas and are used where inspectors have identified potential contraventions. Specifically, these specialists provide assistance with the following:

- the selection and application of appropriate and effective investigative techniques;
- the collection of evidence, and procedures to ensure continuity in the control and custody of evidence;
- taking statements and soliciting information from witnesses;
- the securing and execution of search warrants;
- court procedures, and preparation of court briefs for Crown prosecutors; and
- appearing as witnesses in court proceedings.

Investigation specialists maintain close communication with inspectors who are involved in routine inspections, spot checks and special inspections to ensure adherence and responsiveness to warnings, Ministerial orders, injunctions, and court orders imposed on convicted offenders.

To enforce wildlife legislation, the Minister of the Environment designates Enforcement Officers or confers enforcement powers to a host of agencies, including: the Department of Fisheries & Oceans (DFO), Revenue Canada (Customs), and conservation officers of the provincial and territorial governments. Enforcement officers have five principal duties:

- conducting information and awareness activities;
- conducting inspections to verify compliance with the law;
- reviewing options for preventive and corrective action and explaining legal requirements, by warning individuals or companies of potential violations);
- conducting investigations for evidence of violations and responding to known violations, by issuing tickets, seizing specimens or laying charges.
- assisting a Crown prosecutor during the preparation and conduct of legal procedures.

Existing legislation empowers enforcement officers to enter premises to inspect, search, seize and detain items related to the acts, and demand the production of records. Under certain circumstances, officers may also have the power to arrest suspected violators however levels of authority vary between the different types of legislation.

1.4 Enforcement Philosophy & Approach

The Enforcement Branch is consulted on relevant enforcement issues during the drafting or amendment of all environmental and wildlife laws and regulations. Consideration is given to the different communities (geographic, social, business) that would be affected, the time required for public education to occur, the phase-in period needed for newly regulated communities to come into conformity, and the enforcement powers needed to bring persistent offenders into compliance. As the powers of

environmental and wildlife laws are tested by the courts, the Enforcement Branch may bring forward recommended changes to improve their efficacy. Such is the case with changes to the *CEPA* 1999 currently before the federal House of Commons that will enhance the powers of EC enforcement officers when approved.

Enforcement programs vary between the different laws and regulations, and are developed using the continuum of compliance promotion and enforcement shown in Figure 2. Achieving compliance requires a range of activities from promoting compliance at one end of the spectrum, to verifying compliance, through to inspections and imposing compliance through enforcement work at the other end. In many situations, promoting compliance is not enough to obtain compliance. Likewise, enforcement actions cannot solve all compliance problems. A innovative and fair enforcement system motivates voluntary systems and compliance.

FIGURE 2: ENFORCEMENT CONTINUUM

Regulation Development & Promulgation	Compliance Promotion	Inspections	Investigations	Prosecutions
▪ Consultation with regulated communities during regulatory development.	▪ Information to regulated communities.	▪ Set national and regional priorities and inspection plans. ▪ Determine target sectors for increased inspections (based upon knowledge, risk, performance). ▪ Inspect.	▪ Determine due diligence. ▪ If investigation warranted, apply compliance and enforcement policies by issuing warnings, Ministerial Order, or other action.	▪ Work with the Department of Justice Canada to prepare court case.

With all federal environmental and wildlife laws, the following enforcement principles apply:

- apply Canada's environmental and wildlife laws in a manner that is fair, predictable and consistent, using rules, sanctions and processes securely founded in law;
- administer laws with an emphasis on prevention of damage
- examine every suspected violation known to EC, and take appropriate action;
- encourage the reporting of suspected violations to EC;
- target offenses that have the most significant potential impact on the regulated resource;
- ensure that enforcement staff is properly trained and equipped;
- provide adequate human and financial resources to the enforcement program; and
- publicize enforcement activities to encourage voluntary compliance and demonstrate results.

1.5 Compliance Promotion

Promoting compliance is a necessary and effective way to achieve conformity with the law. Environment Canada has found that the majority of its regulated communities

(referred to as regulatees) will voluntarily comply with new and existing environmental and wildlife laws if they are properly informed and regularly minded of their obligations. EC achieves this by:

- providing educational programs;
- communicating and publishing information (such as pamphlets explaining regulations);
- promoting technology development and evaluation;
- encouraging technology transfer and sharing;
- providing technical assistance and technology development;
- consulting with the public about regulation development and review;
- publishing environmental guidelines and codes of practice; and
- promoting environmental audits.

For instance, under the *Migratory Birds Convention Act (MBCA)* Environment Canada makes regular efforts to increase awareness of the law by attaching a list of commonly committed offenses to hunting permits, and distributing posters with season dates, and bag and possession limits to user groups in each province. The Department has produced an information brochure answering many questions about the Act and has distributed these to organizations and individuals requesting such information. In addition, the Department issues news releases to keep the Canadian public informed on matters relating to migratory birds.

A National Compliance Promotion Plan sets out the promotion activities associated with Environmental Protection Regulatory Programs pursuant to the *CEPA* and the *Fisheries Act*. The Plan provides a record of the compliance activities and products planned, by regulation, in the five regions and Headquarters. Plan activities include stakeholder consultations, presentations at seminars, development and dissemination of compliance promotion letters, publications, pamphlets, videos, technical bulletins, compliance guidelines, articles in trade newsletters and magazines, newspapers, the internet, TV interviews or any other acceptable form of advertisement.

Environment Canada uses the publicity generated by enforcement activities to inform the public, and to deter similar offences. Investigations by EC have shown that regulatees who are slow to comply with new or amended laws are more likely to change their practices when they hear of other parties being subjected to enforcement action. In summary, compliance promotion is largely targeted at the vast majority of regulatees who are willing to comply with the laws, given encouragement and the necessary information on how to be in conformity.

1.6 Inspection Planning

Enforcement and compliance monitoring activities are coordinated through The National Inspection Plan (NIP). Updated annually, the NIP identifies the number and types of inspections to be carried out by Environment Canada officials under the *CEPA* regulations and the pollution prevention provisions of the *Fisheries Act* each year. The

Plan uses a target-oriented approach to focus on national priorities and the most serious environmental risks in each region. For example, the following five regulations were considered national priorities for 1997-1998: Export and Import of Hazardous Wastes Regulations, New Substances Notification Regulations, Ozone-depleting Substances Regulations, National Pollutant Release Inventory, and the Pulp and Paper Effluent Regulations.

The NIP is developed using input received from enforcement and program managers at the district, regional, and national level on matters such as geographic priorities, local operating considerations, and government-wide and departmental priorities. The priorities and direction of the NIP are set at an annual meeting of the National Chiefs of Inspection, consisting of national and regional enforcement chiefs and directors. Some of the specific considerations in setting priorities and in developing planned inspection activities include but are not limited to: environmental significance, geographic scale, compliance history and profile, nature of the regulatory provisions, operational complexity and capacity, the number and the type of targeted population.

The Plan is designed to enable Regional offices to develop detailed plans for their jurisdictions, and facilitate documentation of actual activities carried out under each regulation. After six months, the results of enforcement activities are assessed and used for "course correction". After nine months, the results are used to help develop the subsequent year's NIP. Thus, the NIP serves as a planning, information record, and monitoring tool for the pollution inspection activities carried out by Environment Canada each year.

1.7 Enforcement Tools

In implementing the NIP, Environment Canada and its partners use a variety of techniques and tools to monitor and enforce compliance with federal environmental laws, including:

- inspection and monitoring to verify compliance.
- investigation of violations.
- measures to compel compliance without resorting to formal court action, such as directions by inspectors, warnings issued, , and Ministerial orders.
- measures to compel compliance through court actions, such as injunctions, prosecutions, court orders upon conviction, and civil suits for recovery of costs.

A selection of enforcement responses are defined below:

An Occurrence Report is a report completed when non-compliance or potential non-compliance is discovered by or reported to enforcement staff, and can originate through a self-report from a regulatee, a tip, complaint or referral, conveyed to enforcement staff from outside sources, or as a result of a field inspection / administrative verification or discovery by an officer.

An Inspection is a process that involves verification of compliance with the law when *no* violation is suspected. Inspections can occur at specific sites (field inspections) or they can be conducted remotely by verifying documentation (administrative verifications).

A Field Inspection is one or more on-site visits to conduct any activity required to verify compliance with one regulation / permit / manifest, for one regulatee where *no* infraction is suspected.

Administrative Verification is any activity not conducted on-site to verify compliance, where *no* infraction is suspected, with one regulation / permit for conditions that manifest for one regulatee relating to one facility (if applicable)

An Investigation is the gathering and analyzing of evidence (regardless of location) as a result of a field inspection or administrative verification, a verified occurrence report or where there are reasonable grounds to believe an offense has, is, or is about to occur, in order to verify an alleged violation or to prevent it from occurring.

Intelligence, refers to the body of knowledge gained through gathering and analyzing information that may provide patterns, trends, and clues about criminal activities the knowledge of which then can be used by inspectors, investigators and wildlife officers in performing their duties.

1.8 Policies

Specific enforcement policies have been developed for *The Canadian Environmental Protection Act (1994)*, the *Migratory Birds Convention Act*, the *Canada Wildlife Act*, and the *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act*. Similar policies are currently being developed for the *Fisheries Act*.

The *CEPA* Enforcement and Compliance Policy establishes the principles for fair, predictable and consistent enforcement. It informs all parties who share responsibility for protecting the environment (governments, industry, organized labor and individuals) about what is expected of them and what to expect from the officials who promote compliance and enforce regulations. The Policy also explains the range of enforcement responses to violations that might be taken by Environment Canada enforcement officials, and provides guidance on the appropriate form of response to different situations. This policy is available on the internet at http://www.ec.gc.ca/enforce/policy.

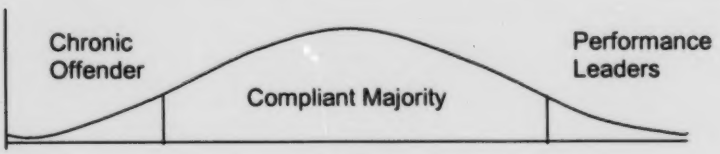
In 1995, a supplemental directive was issued that sets out the process for dealing with offenders of all legislation administered by Environment Canada. The directive emphasizes that enforcement decisions are the responsibility of regional officials, must be consistent with the *CEPA* Policy, and provides additional direction to enforcement officers on the division of powers and responsibility within EC, and the types of response that may be taken at each level within the organization.

Similar to the *CEPA* Enforcement Policy, the purpose of the Wildlife Compliance & Enforcement Policy is to facilitate coordinated and consistent compliance and enforcement activities and responses by the various partners responsible for protecting wildlife in Canada and abroad. This policy is available on the internet at http://www.ec.gc.ca/enforce/wildpol/english/index.htm.

1.9 Compliance Indicators

Environment Canada measures the effectiveness of its actions by verifying compliance among the three groups of regulatees it has defined as: Chronic Offenders, the Compliant Majority, and Performance Leaders, illustrated in Figure 3.

FIGURE 3: REGULATEE COMPLIANCE GROUPINGS



A variety of mechanisms are used to verify compliance rates within each group, including: inspections, taking of samples, auditing reports, responding to tips, and investigations. Random spot checks and auditing activities help to gauge overall levels of compliance within an entire regulated population. Targeted enforcement activities help to define the magnitude and severity of problems within the group of Chronic Offenders. However, because this group by its nature is non-cooperative, the exact size and effect of non-compliance by Chronic Offenders can be difficult to quantify.

Environment Canada is continuing to examine ways to better monitor compliance with the laws for which it is responsible, and in turn the effectiveness of its enforcement activities in ensuring that laws are complied with. Table 1 presents a sample of enforcement activities for 1997-1998.

TABLE 1: ENFORCEMENT ACTIVITIES:
Canadian Environmental Protection Act (CEPA) - Fisheries Act (FA)
Migratory Bird Convention Act (MBCA)

Fiscal Year		Inspection	Investigation	Warning	Direction	Prosecution	*Conviction
CEPA	**97-98**	1,523	56	204	0	8	3
FA	**97-98**	560	22	13	1	7	2
MBCA	**97-98**	1,072	194	0	0	92	120

*Prosecution leading to convictions are not always concluded during the fiscal year in which they were initiated.

1.10 Training

Enforcement of environmental and wildlife legislation requires specialized knowledge and skills, therefore, Environment Canada places a high priority on staff training. The National Training Program, managed by the Enforcement Management Division, is used to direct enforcement training across Canada. Enforcement officers and analysts are trained in duties ranging from basic inspection and investigation skills to very specialized regulation-specific enforcement activities. Example courses include the following:

- Basic and Advanced Investigators Courses
- Storage of PCB Material Regulations
- (9mm) Firearms Conversion Course for wildlife officers
- Metal Mining Liquid Effluent Regulations
- Ocean Dumping Regulations
- Migratory Bird Enforcement & Waterfowl Identification (Prairie & North Region)
- NEMISIS (the new enforcement activity tracking system)

Environment Canada also prepares a variety of educational materials including a health-and-safety reference book, a safety training program, and a National Sampling Protocol for both inspectors and investigators. Canada has also been a leader in developing training tools used in the enforcement of international agreements, such as its computerized species recognition program The CITIES Identification Guide – Birds.

1.11 Special Initiatives: Enforcement Review Process

Pollution and wildlife enforcement are subject to growing pressures domestically and internationally. To address issues being raised, the department initiated an enforcement review process in early 1998. Through a series of consultation and review activities the EC Enforcement Action Plan was developed that contains several key recommendations. In total, 15 individual projects have been initiated under the Action Plan.

1. Strengthening Leadership / Improving Decision-Making Process
    - Clarifying Roles and Responsibilities in HQ and Regions
2. Improving Core Competencies for Enforcement Management and Staff
3. Clarifying Primary Roles and Linkages for Compliance Promotion and Enforcement
4. Improving Internal Communications
5. Improving Internal EC Decision-Making Process
6. *Fisheries Act* Enforcement
    - Complete *Fisheries Act* Enforcement and Compliance Policy
    - Clarify-Improve the 1985 Memorandum of Understanding between EC and DFO
7. Framework for the EC Enforcement and Compliance Policies and Approving EC Enforcement Vision Statement
    - Framework EC Enforcement and Compliance Policies
    - Approving EC Enforcement Vision Statement
8. Improving Organizational Structure Options
9. Applying for Investigative Body Status
10. Assessing Viability of Implementing Peace Officer Status
11. Assessing Current and Projected Resource Needs
12. Improving Regulation Development and Amendment (much of this work is ongoing)
13. Implementing Ticketing Authorities
14. Improving Intelligence Gathering, Analysis and Sharing
15. Implementing a Process to Track the Progress of the Action Plan

1.12 New Features: NEMISIS

The National Enforcement Management Information System and Intelligence System (NEMISIS) is an electronic database available to inspectors, investigators, wildlife officers and management to record all pertinent information related to occurrence reports, inspections and investigations.

Developed over two years, NEMISIS has greatly enhanced the ability of EC to provide the types of statistical and compliance information that is regularly requested by the public, the media and interested groups. It has also enabled the Department to implement common definitions for enforcement activities across the five regions and

headquarters. Now, most enforcement data is logged in a consistent and traceable manner, and is not labour intensive to obtain or verify.

As a management tool NEMISIS can be used to monitor trends, set priorities and prepare regular and special purpose reports. For instance, two mandatory reports on enforcement (or containing enforcement material) are prepared: the *CEPA* Annual Report as legislated by parliament, and the Commission for Environmental Cooperation Annual Report on Enforcement as mandated by the North American Agreement on Environmental Cooperation (NAAEC) side agreement to the NAFTA. Increasingly, both these reports contain information obtained from NEMISIS, particularly statistical data.

Phased implementation of NEMISIS has occurred since 1997, and database enhancements are being planned and incorporated on an on-going basis. In future it is hoped that all permits will be recorded on NEMISIS, and that selected public information will be accessible through Environment Canada's web site.

C. OVERVIEW - CHILE

1.0 Constitutional and Legal Background

When environmental regulations were incorporated into Chile's Constitution in 1980, it was the first time that a legal text of such importance provided for the right of citizens to live in a pollution-free environment. Specifically, regulations issued by D.S.N. 1.150 Ministry of Internal Affairs in October of that year made the State accountable to "ensure that this right is respected, and to protect nature conservation" (Art. 19, No. 8).

In order to guarantee the full implementation of the environmental safeguard, the Constitution incorporated this provision under the "right of resource protection" (Art. 20, Para. 2). Furthermore, provisions were included that recognized the social function of property, and the need for measures to "conserve environmental heritage" (Art. 19, No. 24).

While the 1980 amendments represented an important moment in the legal history of Chile, environmental regulations had been included in various pieces of federal legislation for many years prior. Thus, numerous legal documents have environment related regulations that predate acceptance of the need for environmental protection by Chilean society as a whole.

At present, there are approximately 1,300 legal provisions directly or indirectly related to the environment. These include, for example, legislation in effect since 1916 (Law No. 3.133). These older regulations refer to environmental issues either in a direct or indirect manner at two different levels: those issued by the appropriate authorities and those referenced in national legislation, such as international agreements and treaties. (Annex 4 lists the most important of these internal environmental regulations and the international agreements to which Chile is signatory.)

2.0 Institutional Background

2.1 Law 19.300 in the General Environmental Law (LBMA)

The constitutional provision for the protection of the environment became enforceable when Law 19.300, the General Environmental Law (LBMA) was published in March 1994. The LBMA is the basic instrument used for implementation of national environmental policy. In essence, the Law serves two functions: it sets out the "operational" tools needed to implement the constitutional provisions, and the "institutional" framework needed to manage those tools.

The LBMA has several goals, the first of which is to reinforce the specific contents and the legal scope of the constitutional safeguard of environmental rights (Art. 19, No. 8.) The second goal is to create an institutional framework able to deal with existing environmental issues and to prevent future environmental problems at the national level. For this purpose the Law called for the creation of the National Commission of Environment, now decentralized into Regional Commissions of Environment. The third goal of the Act is to create the necessary instruments for environmental management, such as a system for the evaluation of environmental impacts, quality-control regulations, as well as requirements for pollution prevention and decontamination planning.

A small number of provisions (92 permanent and 7 transitory articles) provide guiding principles, basic conceptual definitions, and the key mechanisms needed for modern and comprehensive management of the environment. While supporting the above-mentioned goals, the LBMA makes possible the development of consistent and realistic environmental policies through application of the principles of public participation, pollution prevention, progressive action, and accountability.

The General Provisions section contains the basic articles of the Act. The second article, for example, includes several definitions, the most important of which are contained in Annex 5.

2.2 The National Commission for the Environment (CONAMA) and Regional Commissions for Environment (COREMAS)

The LBMA accords environmental responsibilities to all government ministries, and established the National Commission for Environment (CONAMA) to fulfill a coordinating role. CONAMA's structure acknowledges the horizontal character of the issues it deals with, and the active role that various Ministries have to play in the development and enforcement of environmental policies. CONAMA is a legal entity with its own capital resources, functioning under the supervision of the President of the Republic through the Ministry General Secretariat of the Presidency. The Minister of Secretary General of the Presidency leads CONAMA's Board of Directors, which consists of Ministers from 13 departments.

An Advisory Council is used by the Board to gather a cross-section of opinions, and to fulfill other legal requirements. Advisory members are drawn from business and labour, and non-government organizations devoted to the protection and study of the environment.

CONAMA is managed by an Executive Director and administered through a decentralized public service via Regional Commissions for Environment (COREMAS). The Executive Director is responsible for the implementation and enforcement of the provisions of the law, and for carrying out the agreements and guidelines set by CONAMA's Board of Directors. COREMAS are the organizations through which the mandate of CONAMA is carried out in Chile's 13 administrative regions.

Each COREMAS is governed by a group consisting of the Regional Governor (Intendente), who is also the Chair, the governors and regional secretaries of the Ministries sitting on the Board of Directors, four regional councilors, and a Regional Director of CONAMA. COREMAS have responsibilities under laws of the republic but may also develop regional policies for the protection and enhancement of the local environment.

3.0 Regulations, Control and Enforcement of Environmental Legislation

3.1 Institutional Framework

In Chile, environmental enforcement is undertaken on a sectoral basis, and is primarily the responsibility of individual government Ministries to effect. CONAMA, particularly its Board of Directors, is responsible for the development and application of mechanisms to facilitate a coordinated regulatory and enforcement response. These mechanisms, (coupled with the management tools of the National Environmental Management System and a public participation process) allow for the effective design and implementation of a comprehensive environmental management system. Specific responsibilities of CONAMA include the following:

I. to develop national policies and a strategic environmental management strategy;

II. to act as an advisory body specialized in the analysis, communication and coordination of environmental issues;

III. to periodically inform the President of the Republic about the enforcement of and compliance with current environmental legislation [Art. 70];

IV. to promote the coordination of environmental controls and enforcement activities between public organizations and municipalities [Art. 72, (e)]. (This power is conferred to the Executive Director since decisions of the Board must be implemented by Department Management or a designated officer thereof);

V. to administer and coordinate a process for Environmental Impact Assessment [LBMA, Art. 8, subsection 3 and Art. 70 (e)];

VI. to ensure standardization of the criteria, requirements, conditions, background certificates, processes, technical requirements and environmental procedures of environmental nature required by the Ministries and other public entities [Art.23, first subsection of LBMA];

VII. to enforce compliance with the norms and conditions under which an Environmental Impact Assessment is carried out [Article 64]. (In cases of non-compliance, the Regional or National Commission for Environment may issue a warning, impose fines up to the equivalent of five hundred taxation units monthly, and cancel approval or acceptance of the Assessment, without detriment to subsequent civil or penal actions.)

Projects and activities falling under the System of Environmental Impact Assessment have greater approval and compliance requirements than those not subject to the System. An entire project, not just particular elements or impacts thereof, must be considered in the assessment, including matters of a qualitative nature that may not be specifically regulated. Projects and activities approved under the Environmental Impact Assessment System require an integrated enforcement approach and have a very different dynamic to the norm. For instance, where a pollution prevention or decontamination plan has been approved, all subsequent activities must comply with the requirements of that plan, and approval of the whole does not allow for deviation from the plan on certain items [Article 46]. Inspections under the System of Environmental Impact Assessment are conducted by Regional Commissions for Environment, or by the National Commission for Environment if the plan comprises more than one region.

CONAMA also possesses coordination powers for dealing with environmental matters not related to the above Evaluation System of Environmental Impact Assessment, such as the management of natural resources.

In summary, two key powers of CONAMA are to coordinate and guide the enforcement process under the System of Environmental Impact Assessment, and to ensure the enforcement of pollution prevention and decontamination plans.

At the same time, there are several other agencies of the State Administration that have enforcement powers concerning environmental issues. These entities develop their own programs, training activities, and action plans, etc. The most important players are the

following:

The State Customs Office (Dirección General de Aduanas) is in charge of controlling the import and export of merchandise harmful to the environment and to human health along coastal and land borders, and at airports of the Republic.

The Chilean Police (Carabineros de Chile) has specific police duties, especially in forestry matters.

Municipalities (Municipalidades) enforce household waste and environmental sanitation at the local level, to meet the needs of the community.

The Agriculture and Livestock Service (Servicio Agrícola y Ganadero) contributes to the agricultural development of the country by conserving and preserving renewable natural resources required for agricultural output. It is also responsible for ensuring compliance with legal standards and regulations on the prevention and eradication of plant pests and contagious animal diseases.

The National Fisheries Office (Servicio Nacional de Pesca) is in charge of compliance promotion and enforcement of the General Fisheries and Agriculture Act; and is responsible for the protection of marine life in all of Chile's water systems.

The State Waters Office (Dirección General de Aguas) protects and plans water resources, and is responsible for ensuring compliance with the Water Code.

The State Office for Territorial Waters and Merchant Navy (Dirección General del Territorio Marítimo y Marina Mercante) is responsible for preventing marine contamination and protecting the aquatic environment. It does this by enforcing the Navigation Act, and regulating the discharge of industrial effluents to watercourses. It must also regulate, enforce, and comply with all current national guidelines and with the International conventions signed by Chile concerning the prevention of marine contamination and the protection of the aquatic environment.

The goal of the Metropolitan Health Environment Service (SESMA - Servicio de Salud Metropolitano de Ambiente) is to "protect public health from all environment related risks". SESMA is in charge of implementing the Health Code, its regulations, and decrees in all metropolitan areas. It also enforces compliance with standards for atmospheric emissions from urban areas and is in charge of controls over solid waste.

Health Services (Servicios de Salud) has a department in charge of environmental

issues—the Department for Environmental Programs. This department develops environmental programs for Health Services and supervises, coordinates and evaluates the activities of this service. It also cooperates in the preservation, improvement and restoration of the quality of the environment.

The National Geology and Mining Service (SERNAGEOMIN - Servicio Nacional de Geología y Minería) is in charge of the regulation of dams and reservoirs (which can cause environmental damage), and the development of applied geologic research initiatives to provide technical and scientific information related to natural phenomena that can be used as a basis for planning in various regions of the country.

The Ministry of Transport and Telecommunications (Ministerio de Transporte y Telecomunicaciones) is responsible for compliance verification and the enforcement of regulations governing emissions from motor vehicles.

The Superintendence of Electricity and Fuel (SEC - Superintendencia de Electricidad y Combustibles) is responsible for enforcing compliance with the rules and regulations of public transportation service contracts.

The Superintendence of Sanitation Services (SSS - Superintendencia de Servicios Sanitarios) is in charge of enforcing the proper provision of sanitation services. It develops and enforces technical standards regarding sanitation and the control of industrial liquid waste.

The mission of the National Woodland Corporation (CONAF - Corporación Nacional Forestal) is the conservation, protection, management, and sustainable use of Chile's renewable resources. In order to be able to carry out its objective, this institution has enforcement powers.

The National Heritage Council (Consejo de Monumentos Nacionales) is in charge of protecting areas, archeological remains, buildings or objects of historic or artistic importance. This Council is a technical body run by the Ministry of Education.

3.2 Methodology

Environmental evaluation and enforcement activities are usually simultaneous, and, on occasion, are considered to be very similar. Nevertheless, it is necessary to describe them individually. The *Methodology for Environmental Control and Inspection Plans and Environmental Audits*, CONAMA, 1995 distinguishes these activities as follows:

I. "Control" refers to one or more measures that, when properly coordinated and respectful of environmental principles, norms and regulations, can help to ensure that an activity achieves the required standards, instructions or plans.

II. "Enforcement" refers to work done in accordance with the law and/or decree by which public entities supervise compliance with environmental legislation.

At present, there are three types of enforcement methods applied to activities that may harm the Chilean environment:

I. "Direct" enforcement is carried out by a government body according to its mandate issued under a legal provision. Public officials cannot delegate this administrative authority.

II. "Indirect" enforcement activities are carried out by government bodies that have jurisdiction or legal authority over some issues (e.g. sectoral), but not over specific environmental issues. These bodies, in effect, carry out *control* activities on environmental issues for which they have not been provided legal authority by entraining the assistance of other bodies that have legal authority over certain aspects of the issue.

III. "Mixed" enforcement activities are carried out by more than one government body, which individually may not possess authority over the specific environmental matter at issue. For instance, inspections would be coordinated and resources such as equipment, employees, financial resources, and technical expertise, would be shared in undertaking the enforcement action.

CONAMA is presently developing a basic framework of environmental regulations to address weaknesses and shortfalls affecting the national inspection system. The goal is to strengthen environmental enforcement duties within various sectors at the national and regional level, and to foster greater inter-institutional coordination. Special attention is being given to enforcement of the Evaluation System of Environmental Impact Assessment.

The government has directed that efforts be made to restructure and modernize the environmental enforcement system through development of mechanisms such as auto-regulation, compulsory declaration of pollutant emissions, grading of industrial activities at a national level, and the implementation of a comprehensive inspection system. CONAMA is also examining the development of voluntary and economic mechanisms.

3.3 Procedures and Plans or Programs for Compliance with Environmental Legislation

One of the objectives of the Environmental Policy for Sustainable Development is to strengthen environmental institutions at the national and regional level. One of the areas of work undertaken was to develop plans and programs for the continuous training of officials responsible for the National Environmental Management System. This is being carried out through the development of training programs, scholarships, short-term courses and post-graduate education.

Another initiative undertaken was the creation of the National Environmental Information System (SINIA), an important tool used to enable easier access to information and improve institutional coordination on environmental issues. It is a decentralized system that supports environmental management and decision-making at the sector and regional level. It is coordinated by CONAMA and relies on information received from public institutions with environmental competence, and generated through CONAMA's activities.

Initiatives and tools were designed to help promote global and sectoral efforts on environmental issues. The best example is the creation of a consolidated environmental budget that includes the expenses of all ministries and other government bodies that monitor environmental management. This resulted in a permanent accountability mechanism that enables monitoring of the conditions and measures under which projects submitted to the Evaluation System of Environmental Impact Assessment are approved. Created and implemented during the second semester of 1998 and with the help of various mechanisms, 94 projects under way or in operation were monitored in Chile that year. Furthermore, a study was conducted to estimate the budget expended by 14 ministries and other state departments in implementing the National Environmental Management System.

The structure of the Estimated Global Environmental (PAGE) consolidated budget enables response to three basic questions concerning the National Environmental Management System.

I. the total resources assigned by the public sector to various activities of environmental management, including capital and operational expenses.
II. the type of environmental management activities to which the budget resources were assigned and the total amount.
III. the institutional distribution of the budget resources assigned, taking into account ministries and other public agencies belonging to central administration or to decentralized bodies.

A connection can be drawn between the historic background and the Environmental Policy for Sustainable Development. Analysis conducted to date indicates that the majority of resources assigned to environmental management have been directed at three key objectives which are: to restore and improve environmental quality; to prevent environmental deterioration; and to encourage the protection of environmental heritage and the sustainable use of natural resources

In January 1993, the Ministry General Secretariat of the Presidency and the Service for the Health of the Environment of the Metropolitan Region (SESMA) signed an agreement to jointly implement a Program for the Control of the Emissions from Permanent Sources (PROCEFF). This agreement was the first step required to implement recommendations contained in *Development of the State Capacity for Control of Permanent Sources,* a study required by the Special Commission for Decontamination of the Metropolitan Region (CEDRM). The study recommended a control program for permanent sources, including the institutional organization, the work methodology, and the technical, human, and financial resources needed to carry it out.

Future plans call for the development of the following:

I. Management Plans for the effective use of renewable natural resources while preserving their capacity to regenerate and biological diversity.

II. Prevention Plans to deal with contamination issues. All areas designated as "latent" must be addressed in the prevention plans. The objective of these plans is to prevent contamination levels from exceeding those stipulated by the environmental quality standards.

III. Decontamination Plans that would be applicable to areas declared as "saturated". Their purpose is to reach the levels stipulated by the environmental quality standards.

4.0 Compliance with the Environmental Legislation in Chile: towards a comprehensive approach

As this document outlines, environmental control in Chile was the responsibility of several public offices, and sector based. Enforcement programs were implemented in diverse areas and, in certain cases, functions were duplicated or difficult to undertake. In recent years, the need to organize this process into a coordinated, consistent and comprehensive system became apparent.

In this context, and that of the present Evaluation System of Environmental Impact (SEIA), the demands placed on CONAMA regarding control activities have grown. Consequently, CONAMA developed, in collaboration with various ministries and departments, an action plan regarding enforcement policies. The general goals of the plan are the following:

I. To design and implement a coordinated enforcement system able to: evaluate compliance with environmental requirements and regulations through enforcement of decontamination plans; develop quality and emission standards (primary and secondary); and review projects that have already been approved.

II. To develop an environmental enforcement policy proposal, which includes medium and long-term objectives that foster the protection of environmental heritage in accordance with international agreements signed by Chile.

III. To design a system able to promote compliance with environmental requirements within the national productive sector.

In order to achieve these goals, CONAMA's Board of Directors approved the establishment of Environmental Enforcement Operating Committees at both the national and regional level in June 1999. As of that September, thirteen Regional Committees were established throughout the country, each with representation from all state bodies having environmental enforcement powers. Regional CONAMA Directors are tasked with coordinating and facilitating the administrative activities of the Committees, such as enforcement, document verification, and environmental audits.

The National Environmental Enforcement Operating Committee is to include all central public bodies with environmental enforcement powers. The Committee will be coordinated by the Executive Management of CONAMA, which will facilitate implementation of enforcement activities and compliance with environmental commitments and regulations assigned under "intra-regional" projects.

D. CONCLUSION

As might be expected of two countries with different histories and significant geographic separation, the foregoing descriptions demonstrate several differences between the Canadian and Chilean constitutional frameworks, legislation, and enforcement systems. However, many similarities are also evident.

The constitutions of the two countries, arising from separate historical traditions, are fundamentally different. The constitution of Chile provides for a unitary system of government, whereas Canada's constitution establishes a federal system with responsibilities divided or shared between federal and provincial/territorial levels of government. However, neither the Chilean nor Canadian systems of government explicitly or implicitly assign responsibility for pollution and wildlife to one particular governmental entity.

In Canada, responsibility is shared not only between the different levels of government, but also amongst a host of federal departments, provincial ministries, and municipal authorities. In Chile, responsibilities are shared between numerous state departments, local authorities, and CONAMA. Environment Canada differs from its counterpart CONAMA in that EC has a direct operational enforcement role. However, because of the diffusion of legislative and enforcement responsibilities within Canada, EC must also play a strong coordinating role, somewhat comparable to that of CONAMA. Both EC and CONAMA ensure that a wide range of pollution and wildlife laws are adequately implemented and enforced across their respective country.

Also similar is the fairly long history that both Chile and Canada have with environmental legislation and instruments (e.g. Law No. 3,133 of 1916 in Chile and the Migratory Birds Convention, signed in 1916 in Canada). Both countries have undergone and are continuing through a period of intense legislative activity. As a result, CONAMA and EC are in the process of implementing relatively new environmental impact assessment legislation, revising existing laws, and drafting new environmental legislation and regulations. Furthermore, both agencies are undertaking reviews of their environmental enforcement practices and implementing new processes aimed at improving the efficiency and effectiveness of their enforcement programs.

Therefore, as Canada and Chile enter the new millenium in partnership under the CCAEC, they are able to not only share their experiences in pursuing common approaches, but also to look at instances where wholly different means to resolve environmental issues have been chosen in each country.

ANNEX 1:

LEGISLATIVE FRAMEWORK RELEVANT TO ENFORCEMENT AND COMPLIANCE PROMOTION

Environmental Management and the Canadian Constitution

In Canada, two orders of government have the major legislative and regulatory authority over the environment, and wildlife and its habitat, as well as an important leadership role in integrating the environment and the economy. In the Canadian Constitution, the "environment" as such is not mentioned. However, in practice, each order of government has exercised its own jurisdictional powers, that are important for effective environmental management, including those related to the enforcement of their legislation.

Responsibilities are based on the allocation of powers related to the environment. Federal environmental responsibility has been derived from a number of powers, especially related to fisheries, migratory birds, inter-provincial and international trade and commerce, criminal law, and peace, order and good government. Key provincial environmental responsibilities derive from, among other things, jurisdiction over the management of resources, property and civil rights, and local works and undertakings.

The shared nature of environmental jurisdiction makes close cooperation between the federal, provincial and territorial governments vital to the success of national environmental and wildlife management policies and objectives. Ministerial councils have been set up to facilitate this cooperation. The Canadian Council of Ministers of the Environment (CCME), for example, is composed of federal, provincial and territorial Ministers responsible for environmental protection. Acting as equal partners, Ministers use the Council to coordinate federal and provincial policies, to resolve inter-jurisdictional problems, to coordinate action on national issues and to exchange information. Similarly, the Wildlife Ministers Council of Canada (WMCC) does the same for wildlife issues.

The federal government recognizes that aboriginal peoples of Canada have an important role to play in environmental matters.

Definitions

Compliance for purposes of this and other Canadian reports on this subject means the state of conformity with the law.

Compliance with Canadian environmental laws is secured through two types of activity: promotion and enforcement.

Enforcement activities include:

- inspection and monitoring to verify compliance;
- Investigations of violations;

- measures to compel compliance without resorting to formal court action, such as directions by inspectors and Ministerial orders; and
- measures to compel compliance through court action, such as injunctions, ticketing, prosecution, court orders upon conviction and civil suits for recovery of costs.

The International Environmental Regime

Environmental issues and solutions are becoming increasingly internationalized. Canada is party to a growing number of international agreements, treaties or conventions that influence its domestic legislation and policies. These arrangements cover a wide range of issues, including endangered species (Convention on International Trade in Endangered Species of Flora and Fauna – CITES), international trade in hazardous waste (the Basel Convention), ozone-depleting substances (the Montreal Protocol), biodiversity (the Biodiversity Convention), migratory birds (Migratory Birds Treaty), and various issues related to the law of the sea (the UN Convention of the Law of the Sea – UNCLOS).

Federal Environmental and Wildlife Legislation

The federal government administers a wide range of laws containing environmental protection provisions designed expressly to protect the environment and to regulate specific activities or businesses.1 As well it has responsibility for laws aimed at protecting wildlife and its habitat. Some statutes, such as the Canadian Environmental Protection Act (CEPA), are designed to prevent pollution of all media, including air, water and land, and regulate all phases of the life cycle of those products identified in CEPA from their import and manufacture to their ultimate disposal. Some, like the Arctic Waters Pollution Prevention Act, the National Parks Act, the Canada Wildlife Act, the Migratory Birds Convention Act, the Fisheries Act and the Oil and Gas Production and Conservation Act, protect specific natural resources. Some, like the Canada Water Act, are ecosystem planning tools. Some regulate specific hazardous products and activities, such as the manufacture of pesticides and radiation-emitting devices, the modification of weather, the installation of air pollution equipment on motor vehicles, the production of atomic energy, and the transportation of dangerous goods. Others regulate transportation in general or specific modes of transportation, such as railways, shipping or aeronautics. Collectively, these statutes and their regulations address thousands of situations, as varied as the subject matter of their respective statutes.

Among others, Environment Canada administers CEPA, the Canada Wildlife Act, the Migratory Birds Convention Act, and the soon-to-be-proclaimed Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act. Under an administrative agreement with the Department of Fisheries and Oceans, Environment Canada also has primary responsibility for the pollution prevention provisions of the Fisheries Act. These deal with deleterious substances that eventually find their way into waters frequented by fish.

This report focuses primarily on the enforcement by Environment Canada of CEPA, the

pollution prevention provisions of the Fisheries Act, the Migratory Birds Convention Act, the Canadian Wildlife Act, the Game Export Act and the Export and Import Permits Act. This focus is appropriate given that this is Canada's first report under the NAAEC. It is expected that future reports will contain a broadened discussion of federal and provincial mandates and roles. The relevant provisions of the Acts addressed in this report are summarized below.

The Canadian Environmental Protection Act

The Canadian Environmental Protection Act (CEPA) was passed, as a cornerstone of federal environmental law, in 1988. After a five-year review, the revised Canadian Environmental Act, or CEPA 1999, was proclaimed into law on March 31, 2000.

This new Act is designed to provide strong protection for the environment and for human health through science based pollution prevention strategies. CEPA gives the federal government significant powers to protect Canadians and the natural environment from pollution, particularly pollution caused by toxic substances. Pollution prevention is the cornerstone of the CEPA, which provides the government with new tools to protect the environment and human health. Under the legislation, all substances currently in use in Canada are now categorized to determine if they are toxic. CEPA also establishes strict deadlines for controlling toxic substances, and requires the virtual elimination of the most dangerous toxic substances.

Some provisions in the Act will come into force later. Provisions in the Act related to compliance orders will be proclaimed on September 1, 2000. These orders can be used to put an immediate stop to a CEPA violation, to prevent a violation from occurring in the first place, or to require action to correct a violation. The Government's authority to determine if other federal Acts meet the CEPA requirements for notice and assessment of toxicity of new substances and biotechnology products will be proclaimed on September 13, 2001. This will allow time for the assessment with the new standards required by Parliament.

The legislation provides Environment Canada enforcement officers with significant new powers to deal with polluters who break the law. CEPA 1999 provides authority to inspect any place where there might be a substance or activity regulated under the Act. Enforcement officers have the authority to seize evidence related to a contravention. In addition, CEPA includes sentencing criteria to promote consideration by the courts of matters such as the cost to remedy the damage done to the environment. There are also Environmental Protection Alternative Measures (EPAMs) to allow for negotiated settlements that avoid the time and expense of lengthy court cases. CEPA 1999 explicitly excludes certain serious offences from being eligible for EPAMs.

CEPA also helps Canada meet several of its international environment obligations, and provides the right-to-sue if the federal government fails to enforce the Act.

The Fisheries Act

The pollution prevention provisions of the Fisheries Act include subsection 36(3), which prohibits the direct or indirect deposit of substances deleterious to fish into water frequented by fish; subsection 36(4), which permits deposits authorized by regulations; and subsection 36(5), which describes the types of regulations that can be made.

Under subsection 36(5), regulations can be made specifying deleterious substances authorized for deposit, waters where they may be deposited, operations pertaining to authorized deposits, quantities or concentrations of deleterious substances authorized for deposit, people who may authorize deposits, and other conditions. Other sections provide powers to inspect, request plans and specifications for works and undertakings that affect or potentially affect fish and fish habitat, and develop orders to control the depositing of deleterious substances. The Minister of Fisheries and Oceans is accountable to Parliament for the administration of the Fisheries Act and its regulations.

The Migratory Birds Convention Act

The Migratory Birds Convention Act (MBCA) aims to conserve the diversity of migratory birds in Canada, and to maintain safe population levels while preserving social, cultural and economic opportunities for the benefit of present and future generations. Unlike CEPA and the pollution prevention provisions of the Fisheries Act, the MBCA deals with the conservation of resources. It protects many species of migratory birds that are hunted across Canada. It also protects non game and insectivorous migratory birds. To meet the requirements of the Convention there are a number of regulations that protect all migratory birds and, in particular, ducks, geese and other game birds. These provisions deal with such things as bag limits, possession limits and requirements, baiting, retrieval of birds, hunting methods, hunting seasons, bird sanctuaries, and the sale of birds. The possession of migratory birds by aviculturists, taxidermists and scientific and educational organizations is also regulated.

ANNEX 2:	ENVIRONMENTAL OBJECTIVES OF ENFORCEMENT INTITUTIONS	
INSTITUTION	**LEGISLATION**	**INSTITUTIONAL OBJECTIVES**
Customs	DFL Nº 30 of 13/04/83	· To control the traffic of merchandise harmful to the environment and to human health at land and coastal borders, and at airports of the Republic of Chile.
CONAF	Law 18.348 of 27/12/1984 SD 728 of 1970	· To contribute to the protection, conservation, increase, management and exploitation of forests, in order to achieve a rapid growth and development of productive forestry activities and, in a manner compatible with the protection and conservation of forests and their environment.
DGA	Law 16.640 of 28/7/67	· To protect and plan water resources. · To ensure that the provisions of the Water Legislation are respected.
DIRECTEMAR	DS Nº 1.340, DS Nº 1 Ministry of National Defense, empowered under DL 2.222	· To apply and enforce the Navigation Law, as well as applicable international agreements and legal standards and regulations · To preserve aquatic environment and navigation on waters under its jurisdiction.
Municipalities	Organic Law of Municipalities Nº 18.695 of 31/3/88	· To meet the needs of the community and ensure its participation in the economic, cultural and social process. · To ensure compliance with the current environmental standards in accordance with the law and regulations. · To organize educational activities for the prevention of damage to the environment.
Ministry of Transport, Enforcement Department	Budget Law,1993	· To control the compliance with rules, regulations and contracts regarding public transportation. · To control external aspects of transport industry, mainly emissions of pollutants. · To open channels for community participation in order to receive complaints and be able to solve them. · To analyze and monitor the transport industry in order to identify distortions and recommend to the Ministry measures to eliminate them.
SAG	Law 18.775	· To contribute to the agrifood development of the country through the protection and conservation of renewable natural resources that affect the agrifood output of the country. · To ensure the compliance with the legal standards and regulations on the prevention and eradication of plant pests and contagious and diseases transmissible by animals. · To promote measures aiming at ensuring soil and water conservation, avoid erosion and improve fertility and drainage.
SERNAGEO-MÍN	DL 3.525 26/11980	· To control industrial effluents which may cause environmental damage. · To develop applied geological research that can provide technical and scientific information on natural phenomena and can serve as a basis for land use planning.
SERNAP	DFL Nº 2.442 of 1978 and DFL Nº 1 of 1992	· To implement the national fish policy and its enforcement, in particular ensure the compliance with the legal standards and regulations regarding fisheries, underwater fishing and other forms of exploitation of hydrobiologic resources.
Health Services	DL Nº 2.763, of 1979	· To protect human health from potential environmentally related risks in the environment. · To ensure compliance with the Health Code, its regulations and decrees.
SESMA	Law Nº 18.122 of 1982	· To protect human health from potential risks existing in the environment. · To ensure compliance with the Health Code, its regulations and decrees.

		· To enforce the Standards on atmospheric emissions from stationary sources in the Metropolitan Area. · To ensure compliance with environmental standards regarding the air from stationary sources, and thereby strengthen their enforcement. · To control solid waste.
SISS	Law N° 18.902 of 27/01/90	· To inspect industries providing sanitary services. · To interpret and ensure compliance with standards regarding sanitary services. · To develop technical standards regarding the design, construction and operation of sanitary services. · To control industries producing liquid waste. · To develop technical standards regarding the discharge of liquid effluents. · To impose sanctions to sanitary services companies.
Ministry of Public Works, Highway Management	Law 15.840, Art. 16 (amendment of Art. 19 of Law 18.267, Art. 2 of Law 18.373, DFL 205 of 1976.	· To coordinate actions that lead to an adequate conservation of the environment in all aspects related to road works. · To provide advice at a managerial level on environmental matters and propose the classification of projects from an environmental point of view. · To promote an adequate coordination between the units of the Highway Management Department, international credit banks and other bodies from within or outside the Ministry of Public Works, taking into consideration the legislation and current standards in this area. · To propose standards, procedures and methodologies for the study and mitigation of environmental impacts. · To propose and carry out the supervision, follow-up and monitoring of environmental aspects of building and operation sites, and propose specific measures to control negative impacts associated to the project.

ANNEX 3: ENVIRONMENTAL ENFORCEMENT PER INSTITUTION													
INSTITUTION	**ENVIRONMENTAL COMPONENTS**									**EMISSIONS TO THE ENVIRONMENT**			
	Air	Surface waters	Under-ground waters	Marine waters	Soil	Flora	Fauna	Land-scape	Forests	Atmos-pheric Emissions	Industr-ial Efflu-ents	Solid waste	Noise and vibra-tions
Customs						X	X					X	
CONAF						X	X	X	X				
DGA		X	X										
DIRECTEMAR		X		X					X		X		
Enforcement Department of MINTRATEL										X			
Municipalities		X			X					X	X	X	X
SAG	X	X	X		X	X	X			X			
SERNAGEOMIN					X							X	
SERNAP		X		X			X						
Regional Health Services	X	X	X	X						X	X	X	X
SESMA	X	X	X							X	X	X	X
SISS										X	X		
Highway Department of the Ministry of Transport						X		X					

ANNEX 4:
SELECTION OF CHILEAN ENVIRONMENTAL REGULATIONS & INTERNATIONAL AGREEMENTS

Internal

I. Law No. 19.300, General Environmental Law, Official Gazette, 09/03/94
II. Supreme Decree (DS) No. 86, Ministry General Secretariat of the Presidency, approves the Regulations for the consultative Council of the National and the Regional Commissions for the Environment, Official Gazette, 08/05/95
III. Supreme Decree (DS) No. 30, Ministry General Secretariat of the Presidency, approves the Regulations for the System for Evaluation of Environmental Impact, Official Gazette, 03/04/97
IV. Supreme Decree (DS) No. 93, Ministry General Secretariat of the Presidency, approves the Regulations for the Environment Quality and Emission Standards, Official Gazette, 26/10/95
V. Supreme Decree (DS) No. 94, Ministry General Secretariat of the Presidency, approves the Regulations that establish the proceedings and stages for the development of Prevention and Decontamination Plans, Official Gazette, 26/10/95
VI. Supreme Decree (DS) No. 351, 1992 of the Ministry of Public Works, approves the Regulations for the neutralization and purification of industrial liquid effluents, Official Gazette, 23/02/93
VII. Executive Decree (DFL) No. 382, 1988 of the Ministry of Public Works, General Act for Sanitation Services, Official Gazette, 21/06/89
VIII. Supreme Decree (DS) No. 1, 1992 of the Ministry of National Defense (Navy), Regulations for Water Contamination, Official Gazette, 18/11/92
IX. Decree Law No. 3.557,1981, on regulations regarding agricultural protection, Official Gazette, 09/02/81
X. Law No. 18.892, General Fisheries and Fish-farming, Official Gazette, 23/12/89
XI. Law No. 17.288, on National Heritage, Official Gazette, 04/02/70
XII. Law No. 18.302, on Nuclear Safety, Official Gazette, 02/05/84
XIII. Law No. 18.248, Mining Law, Official Gazette, 14/10/83 (134N)
XIV. Executive Decree (DFL) No. 725, Sanitation Law, Official Gazette, 31/01/68
XV. Decree Law (DL) No. 3.557,1981, on regulations regarding agricultural protection, Official Gazette, 09/02/81
XVI. Supreme Decree (DS) No. 4, 1992, of the Ministry of Health, standards for emissions from individual or groups of stationary sources, Official Gazette, 02/03/92
XVII. Law No. 18.164, Customs regulations and changes to the pertaining legislation regarding toxic and dangerous substances dangerous to the health, Official

Gazette, 17/09/82

International Agreements

I. The Vienna Convention and the Montreal Protocol on Ozone Depleting Substances.
II. The RAMSAR convention (Wetlands)
III. The CITES Convention (Trade of protected species)
IV. The Convention on Rights of the Sea
V. The Antarctic Treaty
VI. The Basel Convention (Transportation of Hazardous Waste)
VII. United Nations Framework Convention on Climate Changes
VIII. United Nations Convention on Biological Diversity
IX. United Nations Convention on Desertification

ANNEX 5:
KEY DEFINITIONS FROM THE 2ND ARTICLE OF THE LBMA

Environment: the global system formed by natural and artificial elements of physical, chemical and biological nature, social and cultural elements and their interaction in continuous transformation caused by human or natural intervention, that rules and determines the existence and development of life in its various aspects.

Sustainable Development: the process of sustained and equitable improvement of the quality of life of people, based on adequate environmental conservation and protection measures, so that it would not affect the future of next generations.

Conservation of Environmental Heritage: the rational use and exploitation or the restoration, if case be, of environmental elements, especially those specific to the country, that are unique, rare or representative in order to ensure their survival and their regeneration capacity.

Contamination: the existence in the environment of substances, elements, energy of a combination thereof in higher or lower concentration and for a period of time longer of shorter than that established by the current legislation.

Environmental Damage: all loss, decrease, damage or harm done to environment, or to one or more of its components.

Protection of Nature: the totality of policies, plans, programs, standards and actions meant to improve the environment and to prevent and control its damage.

Natural Resources: the environmental components that can be used by human beings in order to satisfy their necessities or spiritual, cultural, social or economic interests.

Restoration: the action of restoring the environment, one or more of its components, to a quality similar to the one they has previous to being damaged, or if this is not possible, of restoring its basic characteristics.

ANNEX 6:
CANADIAN CONTACTS

ENVIRONMENT CANADA

Contacts				
Titles	**H.Q.**	**Region**	***Telephone***	***Fax***
Director General, National Programs Directorate	x		*(819) 997-2019*	*(819) 997-2055*
Director, Enforcement Branch	x		*(819) 953-1523*	*(819) 997-0086*
Chief, Strategies & Implementation	x		*(819) 994-4772*	*(819) 953-3459*
Chief, Inspections & Investigations	x		*(819) 994-2801*	*(819) 953-3459*
Chief, Enforcement Management Division	x		*(819) 953-3882*	*(819) 953-3459*
Chief, Wildlife Division	x		*(819) 953-4383*	*(819) 953-3459*
Chief, Information Management Division	x		*(819) 953-3883*	*(819) 994-0724*
Manager, Enforcement and Emergencies Division		**Pacific and Yukon**	*(604) 666-0002*	*(604) 666-6858*
Chief, Pollution Enforcement Division		**Prairie and Northern**	*(403) 951-8861*	*(403) 495-2451*
Manager, Emergencies & Enforcement Division (Administration)		**Ontario**	*(416) 739-5897*	*(416) 739-4903*
Manager, Emergencies & Enforcement Division		**Quebec**	*(514) 283-0181*	*(514) 496-2087*
Manager, Office of Enforcement		**Atlantic**	*(902) 426-1925*	*(902) 426-2062*

ANNEX 7
CHILEAN CONTACTS

INSTITUTION	TELEPHONE	FAX
Servicio Nacional de Geología y Minería	56 2 737 5050	56 2 737 2026
Dirección General del territorio Marítimo y Marina Mercante	56 32-208001	56 32-255912
Servicio Nacional de ADUANAS	56 32-200500	56 32-212841
Contraloría General de la República	56 2 6724212	56 2 672 5565
Ministerio de Salud Pública	56 2 6394001	56 2 6300272
Ministerio de Bienes Nacionales	56 2 6339305	56 2 6336521
Superintendencia de Servicios Sanitarios	56 2 3824000	56 2 3824003
Comisión Chilena del Cobre	56 2 3828100	56 2 3828300
Ministerio de Defensa Nacional, Subsecretaria de Marina	56 2 2221202	56 2 6345339
Ministerio de Minería	56 2 671 2488	56 2 6963820
Servicio Nacional de Pesca	56 2 6960784	56 2 6960784
Ministerio de Transporte y Telecomunicaciones	56 2 6726503	56 2 6995138
Corporación Nacional Forestal	56 2 3900000	56 2 6715881
Dirección General de Aguas	56 2 6985341	56 2 6985341
Ministerio de Economía, Fomento y Reconstrucción	56 2 6725522	56 2 6726040
Servicio Agrícola y Ganadero	56 2 6982244	56 2 6721812

CANADA-CHILE AGREEMENT ON
ENVIRONMENTAL COOPERATION

ENVIRONMENTAL ENFORCEMENT AND COMPLIANCE FRAMEWORKS IN CANADA AND CHILE

December, 2001

Environmental Enforcement and Compliance Frameworks in Chile and Canada

TABLE OF CONTENTS

			Pages
A.	**INTRODUCTION**		1
B.	**OVERVIEW - CANADA**		2
	1.1	Constitutional Context	2
	1.2	Federal Environmental Laws and Commitments	2
	1.3	Enforcement Structure and Operations	4
	1.4	Enforcement Philosophy and Approach	7
	1.5	Compliance Promotion	8
	1.6	Inspection Planning	9
	1.7	Enforcement Tools	10
	1.8	Policies	11
	1.9	Compliance Indicators	11
	1.10	Training	13
	1.11	Special Initiatives: Enforcement Review Process	13
	1.12	NEMISIS	14
C.	**OVERVIEW - CHILE**		15
	1.0	Constitutional and Legal Background	15
	2.0	Institutional Background	15
	2.1	Law 19.300 in the General Environmental Law (LBMA)	15
	2.2	The National Commission for Environment (CONAMA) and Regional Commissions for Environment (COREMAS)	16
	3.0	Regulation, Control and Enforcement of Environmental Legislation	17
	3.1	Institutional Framework	17
	3.2	Methodology	20
	3.3	Procedures and Plans or Programs for Compliance with Environmental Legislation	22
	4.0	Compliance with Environmental Legislation in Chile: towards an comprehensive approach	23
D.	**CONCLUSION**		26
E.	**ANNEXES**		27

A. INTRODUCTION

In July 1997 the *Canada-Chile Free Trade Agreement* entered into force, along with an environmental side agreement; the *Canada-Chile Agreement on Environmental Cooperation (CCAEC)*. The CCAEC is intended to ensure that enforcement of domestic pollution and wildlife laws go hand in hand with economic growth and trade between the two countries. Key objectives of the CCAEC include:

- increased cooperation between the Parties to better conserve, protect, and enhance the environment, including wild flora and fauna;
- strengthened cooperation on the development and improvement of environmental and wildlife laws, regulations, procedures, policies, and practices;
- enhanced compliance with, and enforcement of, environmental and wildlife laws and regulations; and
- promotion of pollution prevention policies and practices.

This report was prepared to facilitate the exchange of information on the enforcement structures and activities currently in place in Canada and Chile. Both countries prepared their own section for this report, and contributed to the introduction and conclusion sections.

At present, Canada and Chile are reviewing and undertaking improvements to their environmental laws and responsible enforcement agencies, and some of the information presented here may change in the near future. For example Canada has completed 15 special projects in order to improve the effectiveness and efficiency of its environmental and wildlife enforcement program (see section 1.11). And in Chile, implementation has begun for a Coordinated Enforcement Program under the Environmental Impact Assessment System that includes the participation of approximately 15 state departments that share environmental responsibilities.

Each country has striven to address the following enforcement subject areas in this report: constitutional and legislative frameworks, enforcement structures, operations, methodologies, approaches, and implementation tools and policies. Chile is continuing to assemble information on these matters and will provide details as soon as they are available. The annexes contain a list of key environmental enforcement organizations in both countries.

Additional information on the *Canada-Chile Agreement on Environmental Cooperation* and enforcement activities can be accessed through the National Secretariats web sites at: http://can-chil.gc.ca and http://www.conama.cl/chile-canada, and from Environment Canada's web site at: www.ec.gc.ca and CONAMA's web site at: http://www.conama.cl

B. OVERVIEW - CANADA

1.1 Constitutional Context

In Canada, federal, provincial and territorial governments share legislative and regulatory authority over the protection and management of the environment, wildlife and its habitat. Each order of government passes its own laws and makes regulations, and exercises its powers under these laws including enforcement. The focus of this report is on the enforcement responsibilities of the federal Department of the Environment, also referred to as Environment Canada (EC).

Federal environmental authority include but are not limited to fisheries; criminal law; the international trade and commerce; census and statistics; federal works and undertaking; and peace, order and good government. Key constitutional authorities used by provinces to protect the environment include but are not limited to the management and protection of natural resources; civil and property rights; and works of a local and private nature.

The shared nature of environmental jurisdiction makes close cooperation between the federal, provincial and territorial governments vital to the success of national environmental and wildlife management policies and objectives. Ministerial councils have been set up to facilitate this cooperation. The Canadian Council of Ministers of the Environment (CCME), for example, is composed of federal, provincial and territorial Ministers responsible for environmental protection. Acting as equal partners, Ministers use the Council to coordinate policies and actions, to resolve inter-jurisdictional problems, and to exchange information. Similarly, the Wildlife Ministers Council of Canada (WMCC) does the same with respect to wildlife issues.

Enforcement of environmental and wildlife legislation at all levels of government is conducted within the context of the Canadian legal framework that includes the *Canadian Charter of Rights and Freedoms*, the *Criminal Code*, the *Privacy Act*, and the *Canada Evidence Act*. Most environmental and wildlife legislation in Canada provide for the right to search, seize, and detain under the rules established by legislation.

1.2 Federal Environmental Laws and Commitments

Canada is party to several international agreements, treaties or conventions whose purpose is to protect the environment and wildlife. The commitments pertain to a variety of issues and include the following

Conventions and Protocol

- Convention on International Trade in Endangered Species of Flora and Fauna (CITES)
- Basel Convention (on the international trade of hazardous wastes)
- Montreal Protocol (calling for scheduled reduction in ozone-depleting substances)
- UN Convention on Long-Range Transboundary Air Pollution (LRTAP)
- Convention on Biological Diversity
- London Convention (regulates the deliberate disposal of wastes at sea by dumping or incineration)

Agreements

In addition, Canada is subject to several trade agreements that contain items or have side agreements pertaining to environmental protection or that otherwise impact environmental governance, for example: the Canada-Chile Free Trade Agreement (CCFTA) and the North American Free Trade Agreement (NAFTA).

Canada fulfils its international and domestic environmental and wildlife commitments through a host of legislation and regulations. Some of the key laws administered at the federal level are the following:

- *Canadian Environmental Protection Act* (*CEPA*), 1999
- *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act, (WAPPRIITA),* 1996
- *Migratory Birds Convention Act (MBCA)*, 1994
- *Fisheries Act (FA)*, 1985
- *Canada Wildlife Act* (CWA), 1994
- *Transportation of Dangerous Goods Act (TDGA),* 1992

These Acts and others are implemented through numerous regulations. For instance, there are 29 regulations under *CEPA 1999* pertaining to matters such as pollution prevention, management of toxic substances, fuels, vehicle and engine emissions, international air and water pollution, waste disposal at sea, environmental emergencies, biotechnology, and enforcement.

Federal laws and regulations are implemented through a comprehensive compliance promotion and enforcement program that is the focus of this report. However, two other environmental protection tools are worthy of note that help to define Canada's environmental management framework: the *Canadian Environmental Assessment Act* (CEAA) and the Green Government initiative.

The purpose of *CEAA* is to ensure that potential environmental effects are carefully considered where the federal government is initiating, funding, granting land towards, or exercising approval authority over a proposed undertaking. The Act requires the responsible government authority to assess the potential impact of the proposal on the

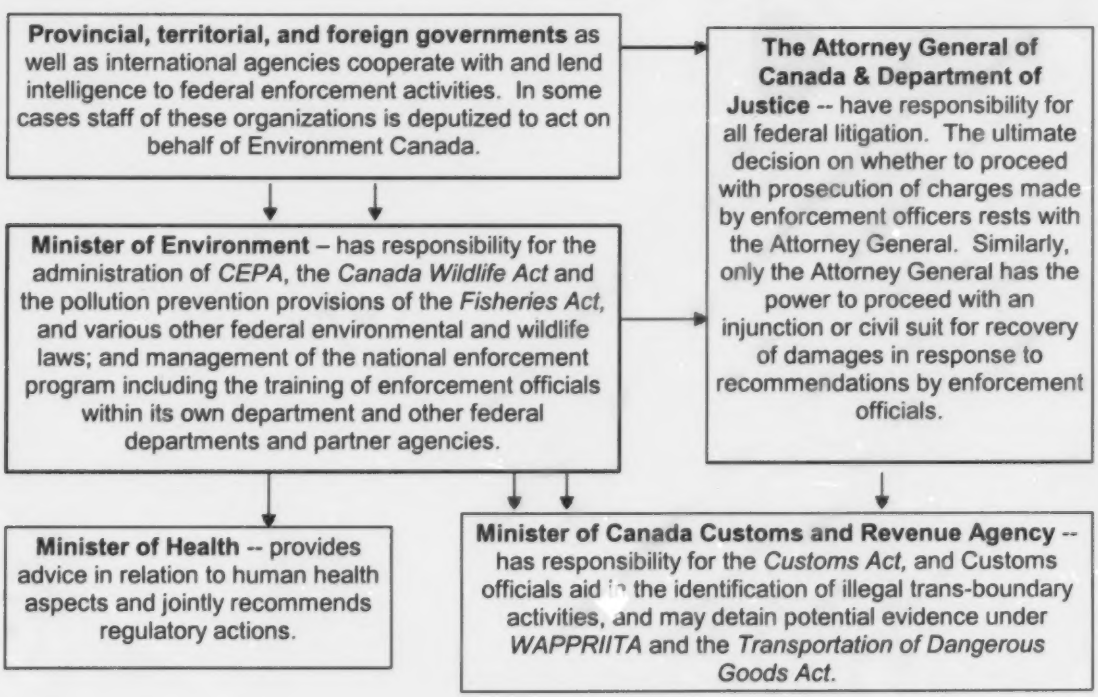
environment, and to consult as necessary with other federal departments to seek input on relevant laws and regulations.

The Green Government initiative applies to on-going government operations and was developed to ensure that federal activities meet federal environmental and wildlife laws and standards, and serve as an example to Canadians and the Canadian business community. Within Environment Canada, subject matter specialists are tasked with promoting government compliance with existing federal environmental laws, and Enforcement Program Personnel are tasked with bringing government into compliance with new laws and regulations as they are promulgated.

1.3 Enforcement Structure & Operations

Enforcement of environmental and wildlife laws is a shared responsibility among numerous federal, provincial and territorial authorities, and is undertaken in cooperation with counterpart authorities in other countries, and with international agencies. Federally, the Departments of Environment, Health, the Attorney General, Justice, the Royal Canadian Mounted Police (R.C.M.P.), Canada Customs and Revenue Agency all play an important role. Figure 1 illustrates the responsibilities and relationships between the key parties involved in enforcement.

FIGURE 1: SUMMARY OF ENFORCEMENT RESPONSIBILITIES



Within Environment Canada the enforcement program is administered through a headquarters Enforcement Branch, and five administrative regional offices that are responsible for day-to-day enforcement activities.

The **Enforcement Branch** consists of the Reporting & Information Management Division, the Training and Learning Division, the Compliance Assurance Division, the Inspection and Investigation Division, and the Regulatory and Development Division. A separate Division is responsible for most of the activities related to wildlife enforcement. Branch Headquarters are located in the nation's capital.

The Enforcement Branch provides overall national, functional direction for coordination of operations; developing and monitoring the annual National Inspection Plan; developing and administering enforcement training courses; reviewing new regulations and proposed changes to existing regulations; and coordinating international operations, among other duties.

The Wildlife Enforcement and Intelligence Division ensures that new regulations are enforceable and that policies are developed and implemented to support wildlife enforcement officers' work. This Division also plays a role of coordination with national and international agencies, which deals with complex investigations and intelligence projects. It collaborates with partners in preparing guides and other procedures manuals for identification of plants and animals and training purposes. The Wildlife Enforcement and Intelligence Division represents Canada at international meetings such as the Conference of Parties for CITES and with wildlife enforcement working groups such as the CITES working group from Interpol and the World Customs Organization.

Responsibilities of the Reporting & Information Management Division include developing and maintaining a national enforcement information system (NEMISIS); preparing annual and specialized reports on enforcement and compliance; and coordinating of data and information on enforcement actions concerning regional and headquarters activities.

The Training and Learning Division designs and delivers a variety of specialized courses to ensure that Environmental Protection Enforcement officers and Wildlife Protection Enforcement Officers are well equipped for the special needs of the job. Training is mainly provided to Environment Canada employees. However, employees from other organizations or countries may also participate in the courses offered by this Division.

The Regulatory Development Division ensures that new regulations are enforceable, the Division also prepares enforcement strategies.

The Inspection and Investigation Division is responsible for the preparation of the annual inspection plan and provides support to the regions in giving advice on regional inspections and investigations.

Divided among the five regional offices (Atlantic, Quebec, Ontario, Prairie and Northern, Pacific and Yukon), there are approximately twenty district offices, responsible for implementation of the national pollution and wildlife enforcement program. Roughly 200 staff operating from headquarters and regional offices carry out the full range of enforcement functions. These include managers, enforcement officers, and those involved with functions noted above.

Environmental Protection Officers

- Enforcement Officers have the most frequent and regular contact with the companies, individuals and government agencies affected by environmental legislation. Enforcement officers have five main roles:

  - carry out inspections to verify compliance with the law;
  - review options for preventive and corrective action, including warning of potential violations;
  - ensure that corrective measures be taken in an emergency, where there is danger to the environment, human life or health, caused when the unauthorized release of a regulated substance has occurred or is about to occur;
  - participate in investigations to obtain evidence of violations; and
  - prepare court briefs for prosecution.

Conducting an investigation implies:

- the selection and application of appropriate and effective investigative techniques;
- the collection of evidence, and procedures to ensure continuity in the control and custody of evidence;
- taking statements and soliciting information from witnesses;
- the securing and execution of search warrants;
- court procedures, and preparation of court briefs for Crown prosecutors; and
- appearing as witnesses in court proceedings.

Wildlife Protection Officers

To enforce wildlife legislation, the Minister of the Environment designates Wildlife Protection Officers or confers enforcement powers to a host of agencies, including: the Department of Fisheries & Oceans (DFO), Revenue Canada (Customs), and conservation officers of the provincial and territorial governments. Wildlife Protection Officers have many duties such as:

- conducting information and awareness activities;
- completing intelligence analysis to support inspections and investigations;
- coordinating activities with partners and foreign agencies;
- conducting inspections to verify compliance with the law;

- reviewing options for preventive and corrective action and explaining legal requirements, by warning individuals or companies of potential violations);
- conducting investigations for evidence of violations and responding to known violations, by issuing tickets, seizing specimens or laying charges.
- assisting a Crown prosecutor during the preparation and conduct of legal procedures.

Existing legislation empowers enforcement officers to enter premises to inspect, search, seize and detain items related to the Acts, and demand the production of records. Officers also have the power to arrest suspected violators.

1.4 Enforcement Philosophy & Approach

The Enforcement Branch is consulted on relevant enforcement issues during the drafting or amendment of all environmental and wildlife laws and regulations. Consideration is given to the different communities (geographic, social, business) that would be affected, the time required for public education to occur, the phase-in period needed for newly regulated communities to come into conformity, and the enforcement powers needed to bring persistent offenders into compliance. As the powers of environmental and wildlife laws are tested by the courts, the Enforcement Branch may bring forward recommended changes to improve their efficacy.

Enforcement actions vary between the different laws and regulations, and are developed using the continuum of compliance promotion and enforcement shown in Figure 2. Achieving compliance requires a range of activities from promoting compliance at one end of the spectrum, to verifying compliance, through to inspections and imposing compliance through enforcement work at the other end. In many situations, promoting compliance is not enough to obtain compliance. Likewise, enforcement actions cannot solve all compliance problems. An innovative and fair enforcement system motivates voluntary systems and compliance.

FIGURE 2: ENFORCEMENT CONTINUUM

Regulation Development & Promulgation	Compliance Promotion	Inspections	Investigations	Prosecutions
▪ Consultation with regulated communities during regulatory development.	▪ Information to regulated communities.	▪ Set national and regional priorities and inspection plans. ▪ Determine target sectors for increased inspections (based upon knowledge, risk, performance). ▪ Inspect.	▪ Determine due diligence. ▪ If investigation warranted, apply compliance and enforcement policies by issuing warnings, Ministerial Order, or other action.	▪ Work with the Department of Justice Canada to prepare court case.

With all federal environmental and wildlife laws, the following enforcement principles apply:

- apply Canada's environmental and wildlife laws in a manner that is fair, predictable and consistent, using rules, sanctions and processes securely founded in law;
- administer laws with an emphasis on prevention of damage
- examine every suspected violation known to EC, and take appropriate action;
- encourage the reporting of suspected violations to EC;
- target offenses that have the most significant potential impact on the regulated resource;
- ensure that enforcement staff is properly trained and equipped;
- provide adequate human and financial resources to the enforcement program; and
- publicize enforcement activities to encourage voluntary compliance and demonstrate results.

1.5 Compliance Promotion

Promoting compliance is a necessary and effective way to motivate actions of the regulated communities conform with the law. Environment Canada has found that the majority of its regulated communities (referred to as regulatees) will voluntarily comply with new and existing environmental and wildlife laws if they are properly informed and regularly reminded of their obligations. EC achieves this by:

- providing educational programs;
- communicating and publishing information (such as pamphlets explaining regulations);
- promoting technology development and evaluation;
- encouraging technology transfer and sharing;
- providing technical assistance and technology development;
- consulting with the public about regulation development and review;
- publishing environmental guidelines and codes of practice; and
- promoting environmental audits.

For instance, under the *Migratory Birds Convention Act (MBCA)* Environment Canada makes regular efforts to increase awareness of the law by joining to the permit a summary of the regulations, distributing posters with season dates, and bag and possession limits to user groups in each province. The Department has produced an information brochure answering many questions about the Act and has distributed these to organizations and individuals requesting such information. In addition, the Department issues news releases to keep the Canadian public informed on matters relating to migratory birds.

A National Compliance Promotion Plan sets out the promotion activities associated with Environmental Protection Regulatory Programs pursuant to the *CEPA* 1999 and the *Fisheries Act*. The Plan provides a record of the compliance activities planned, for each regulation, and carried out by promotion specialists in the five regions and

Headquarters. The Compliance Promotion activities include stakeholder consultations, presentations at seminars, development and dissemination of compliance promotion letters, publications, pamphlets, videos, technical bulletins, compliance guidelines, articles in trade newsletters and magazines, newspapers, the internet, TV interviews or any other acceptable form of advertisement.

Environment Canada uses the publicity generated by media coverage of enforcement actions to inform the public, and to deter similar offences. Investigations by EC have shown that regulatees who are slow to comply with new or amended laws are more likely to change their practices when they hear of other parties being subjected to enforcement action. In summary, compliance promotion is largely targeted at the vast majority of regulatees who are willing to comply with the laws, given encouragement and the necessary information on how to be in conformity.

1.6 Inspection Planning

Enforcement and compliance monitoring activities related to pollution are coordinated through The National Inspection Plan (NIP). Updated annually, the NIP identifies the number and types of inspections to be carried out by Environment Canada officials under the *CEPA 1999* regulations and the pollution prevention provisions of the *Fisheries Act* each year. The Plan uses a target-oriented approach to focus on national priorities and the most serious environmental risks in each region. For example, the following five regulations were considered national priorities for 1999-2000: Export and Import of Hazardous Wastes Regulations, New Substances Notification Regulations, Ozone Depleting Substances Regulations, and the National Pollutant Release Inventory.

The NIP is developed using input received from enforcement and program managers at the district, regional, and national level on matters such as geographic priorities, local operating considerations, and government-wide and departmental priorities. The priorities and direction of the NIP are set at an annual meeting of the National Chiefs of Inspection, consisting of national and regional enforcement chiefs and directors. Some of the specific considerations in setting priorities and in developing planned inspection activities include but are not limited to: environmental significance, geographic scale, compliance history and profile, nature of the regulatory provisions, operational complexity and capacity, the number and the type of targeted population.

The Plan is designed to enable Regional offices to develop detailed plans for their jurisdictions, and facilitate documentation of actual activities carried out under each regulation. After six months, the results of enforcement activities are assessed and used for "course correction". After nine months, the results are used to help develop the subsequent year's NIP. Thus, the NIP serves as a planning, information record, and monitoring tool for the pollution inspection activities carried out by Environment Canada each year.

1.7 Enforcement Tools

In implementing the NIP, Environment Canada and its partners use a variety of techniques and tools to monitor and enforce compliance with federal environmental laws, including:

- inspection and monitoring to verify compliance.
- investigation of violations.
- measures to compel compliance without resorting to formal court action, such as directions by inspectors, warnings issued, and Ministerial orders.
- measures to compel compliance through court actions, such as injunctions, prosecutions, court orders upon conviction, and civil suits for recovery of costs.

A selection of enforcement responses are defined below:

An Occurrence Report is a report completed when non-compliance or potential non-compliance is discovered by or reported to enforcement staff, and can originate through a self-report from a regulatee, a tip, complaint or referral, conveyed to enforcement staff from outside sources, or as a result of a field inspection / administrative verification or discovery by an officer.

An Inspection is a process that involves verification of compliance with the law when *no* violation is suspected. Inspections can occur at specific sites (field inspections) or they can be conducted remotely by verifying documentation (documentary verifications).

> A Field Inspection is one or more on-site visits to conduct any activity required to verify compliance with one regulation / permit / manifest, for one regulatee where *no* infraction is suspected.
>
> A Documentary Verification is a regulatee's compliance verification of data reporting where *no* infraction is suspected. Regulatee's mandatory reports are being used to verify compliance with respect to regulatory standards.

An Investigation is the gathering and analyzing of evidence (regardless of location) as a result of a field inspection or administrative verification, a verified occurrence report or where there are reasonable grounds to believe an offense has, is, or is about to occur, in order to verify an alleged violation or to prevent it from occurring.

Intelligence, refers to the body of knowledge gained through gathering and analyzing information that may provide patterns, trends, and clues about criminal activities the knowledge of which then can be used by inspectors, investigators and wildlife officers in performing their duties.

1.8 Policies

Specific enforcement policies have been developed for *The Canadian Environmental Protection Act (1994)*, the *Migratory Birds Convention Act*, the *Canada Wildlife Act*, and the *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act*. Similar policies are currently being developed for the *Fisheries Act*.

The *CEPA 1999* Enforcement and Compliance Policy establishes the principles for fair, predictable and consistent enforcement. It informs all parties who share responsibility for protecting the environment (governments, industry, organized labor and individuals) about what is expected of them and what to expect from the officials who promote compliance and enforce regulations. The Policy also explains the range of enforcement responses to violations that might be taken by Environment Canada enforcement officials, and provides guidance on the appropriate form of response to different situations. This policy is available on the internet at http://www.ec.gc.ca/enforce/policy.

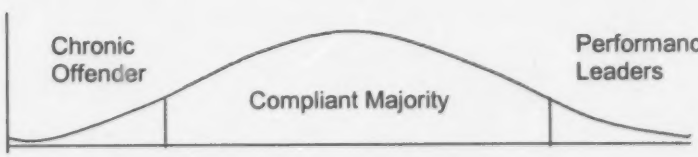
In 1995, a supplemental directive was issued that sets out the process for dealing with offenders of all legislation administered by Environment Canada. The directive emphasizes that enforcement decisions are the responsibility of regional officials, must be consistent with the *CEPA 1999* Policy, and provides additional direction to enforcement officers on the division of powers and responsibility within EC, and the types of response that may be taken at each level within the organization.

Similar to the *CEPA 1999* Enforcement Policy, the purpose of the Wildlife Compliance & Enforcement Policy is to facilitate coordinated and consistent compliance and enforcement activities and responses by the various partners responsible for protecting wildlife in Canada and abroad. This policy is available on the internet at http://www.ec.gc.ca/enforce/wildpol/english/index.htm.

1.9 Compliance Indicators

Environment Canada measures the effectiveness of its actions by verifying compliance among the three groups of regulatees it has defined as: Chronic Offenders, the Compliant Majority, and Performance Leaders, illustrated in Figure 3.

FIGURE 3: REGULATEE COMPLIANCE GROUPINGS



A variety of mechanisms are used to verify compliance rates within each group, including: inspections, taking of samples, auditing reports, responding to tips, and

investigations. Random spot checks and auditing activities help to gauge overall levels of compliance within an entire regulated population. Targeted enforcement activities help to define the magnitude and severity of problems within the group of Chronic Offenders. However, because this group by its nature is non-cooperative, the exact size and effect of non-compliance by Chronic Offenders can be difficult to quantify.

Environment Canada is continuing to examine ways to better monitor compliance with the laws for which it is responsible, and in turn the effectiveness of its enforcement activities in ensuring that laws are complied with. Table 1 presents a sample of enforcement activities for fiscal year 1998-1999 to 2000-2001.

TABLE 1: ENFORCEMENT ACTIVITIES

Canadian Environmental Protection Act (CEPA) - Fisheries Act (FA)
Migratory Bird Convention Act (MBCA) - Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act (WAPPRIITA)

Fiscal Year	ACT	Inspections	Investigations	Written Warnings	Written Directions	Prosecutions	Convictions
1998-1999	**CEPA**	2,613	77	249	1	3	1
	FA	2929	49	32	9	3	2
	MBCA[1]	133	197	6	23	142	133
	WAPPRIITA[1]	2,490	885	66	180	11	7
1999-2000	**CEPA**	3,304	64	468	9	26	1
	FA	2,825	44	113	25	4	3
	MBCA	68	220	9	13	391	356
	WAPPRIITA	2,311	604	81	89	21	15
2000-2001	**CEPA 1988**	605	6	123	-	8	6
	CEPA 1999	2,642	14	327	22	3	1
	FA	3,353	85	125	26	8	2
	MBCA	275	213	9	10	206	206
	WAPPRIITA	1790	210	26	6	20	8

[1] Preliminary statistics for MCBA and WAPPRITTA, for all these fiscal years.

1.10 Training and educational materials

Enforcement of environmental and wildlife legislation requires specialized knowledge and skills, therefore, Environment Canada places a high priority on staff training. The National Training Program, managed by the Enforcement Management Division, is used to direct enforcement training across Canada. Enforcement officers and analysts are trained in duties ranging from basic inspection and investigation skills to very specialized regulation-specific enforcement activities. Example courses include the following:

- Storage of PCB Material Regulations
- (9mm) Firearms Conversion Course for wildlife officers
- Metal Mining Liquid Effluent Regulations
- Ocean Dumping Regulations
- General Environmental Training for the enforcement officers
- Migratory Bird Enforcement & Waterfowl Identification (Prairie & North Region)
- NEMISIS (the new enforcement activity tracking system)
- World Customs Organizations CITES training course

Environment Canada also prepares a variety of educational materials including a health-and-safety reference book, a safety training program, and a National Sampling Protocol for enforcement officers. Canada has also been a leader in developing training tools used in the enforcement of international agreements, such as its series of CITES identification guides on birds; crocodilians; turtles and tortoises; and sturgeons and paddlefish.

1.11 Special Initiatives: Enforcement Review Process

Pollution and wildlife enforcement are subject to growing pressures domestically and internationally. To address issues being raised, the Department initiated an enforcement review process in early 1998. Through a series of consultation and review activities the EC Enforcement Action Plan was developed that contains several key recommendations. In total, 15 individual projects have been initiated under the Action Plan. Thirteen of those projects have been completed. Negotiations on the Memorandum of Understanding with the Department of Fisheries And Oceans are not completed yet (6). Moreover, EC is currently looking at its organizational structure for its enforcement program (8).

1. Strengthening Leadership / Improving Decision-Making Process
    - Clarifying Roles and Responsibilities in HQ and Regions
2. Improving Core Competencies for Enforcement Management and Staff
3. Clarifying Primary Roles and Linkages for Compliance Promotion and Enforcement
4. Improving Internal Communications
5. Improving Internal EC Decision-Making Process
6. *Fisheries Act* Enforcement
    - Complete *Fisheries Act* Enforcement and Compliance Policy

- Clarify-Improve the 1985 Memorandum of Understanding between EC and DFO

7. Framework for the EC Enforcement and Compliance Policies and Approving EC Enforcement Vision Statement
    - Framework EC Enforcement and Compliance Policies
    - Approving EC Enforcement Vision Statement
8. Improving Organizational Structure Options
9. Applying for Investigative Body Status
10. Assessing Viability of Implementing Peace Officer Status
11. Assessing Current and Projected Resource Needs
12. Improving Regulation Development and Amendment (much of this work is ongoing)
13. Implementing Ticketing Authorities
14. Improving Intelligence Gathering, Analysis and Sharing
15. Implementing a Process to Track the Progress of the Action Plan

1.12 National Enforcement Management Information System and Intelligence Systems (NEMISIS)

The National Enforcement Management Information System and Intelligence System (NEMISIS) is an electronic database available to enforcement officers (inspectors, and investigators), wildlife officers and management to record and track all pertinent information related to occurrence reports, inspections and investigations.

Developed in 1997, NEMISIS has greatly enhanced the ability of EC to provide timely statistical and detailed reports on enforcement activities requested by the public, the media and interested groups. It has also enabled the Department to implement common definitions for enforcement activities across the five regions and headquarters. Now, most enforcement data is logged in a consistent and traceable manner, and is not labour intensive to obtain or verify.

As a management tool NEMISIS can be used to monitor trends, set priorities and prepare regular and special purpose reports. For instance, two mandatory reports on enforcement (or containing enforcement material) are prepared: the *CEPA 1999* Annual Report as legislated by Parliament, and the Commission for Environmental Cooperation Annual Report on Enforcement as mandated by the North American Agreement on Environmental Cooperation (NAAEC) side agreement to the NAFTA. Increasingly, both these reports contain information obtained from NEMISIS, particularly statistical data.

Phased implementation of NEMISIS has occurred since 1997, and database enhancements are being planned and incorporated on an on-going basis. CITES permits are now issued through NEMISIS. In the future, selected public information will be accessible through Environment Canada's web site.

C. OVERVIEW - CHILE

1.0 Constitutional and Legal Background

When environmental regulations were incorporated into Chile's Constitution in 1980, it was the first time that a legal text of such importance provided for the right of citizens to live in a pollution-free environment. Specifically, regulations issued by D.S.N. 1.150 Ministry of Internal Affairs in October of that year made the State accountable to "ensure that this right is respected, and to protect nature conservation" (Art. 19, No. 8).

In order to guarantee the full implementation of the environmental safeguard, the Constitution incorporated this provision under the "right of resource protection" (Art. 20, Para. 2). Furthermore, provisions were included that recognized the social function of property, and the need for measures to "conserve environmental heritage" (Art. 19, No. 24).

While the 1980 amendments represented an important moment in the legal history of Chile, environmental regulations had been included in various pieces of federal legislation for many years prior. Thus, numerous legal documents have environment related regulations that predate acceptance of the need for environmental protection by Chilean society as a whole.

At present, there are approximately 1,300 legal provisions directly or indirectly related to the environment. These include, for example, legislation in effect since 1916 (Law No. 3.133). These older regulations refer to environmental issues either in a direct or indirect manner at two different levels: those issued by the appropriate authorities and those referenced in national legislation, such as international agreements and treaties. (Annex 4 lists the most important of these internal environmental regulations and the international agreements to which Chile is signatory.)

2.0 Institutional Background

2.1 Law 19.300 in the General Environmental Law (LBMA)

The constitutional provision for the protection of the environment became enforceable when Law 19.300, the General Environmental Law (LBMA) was published in March 1994. The LBMA is the basic instrument used for implementation of national environmental policy. In essence, the Law serves two functions: it sets out the "operational" tools needed to implement the constitutional provisions, and the "institutional" framework needed to manage those tools.

The LBMA has several goals, the first of which is to reinforce the specific contents and the legal scope of the constitutional safeguard of environmental rights (Art. 19, No. 8.) The second goal is to create an institutional framework able to deal with existing environmental issues and to prevent future environmental problems at the national level. For this purpose the Law called for the creation of the National Commission of Environment, now decentralized into Regional Commissions of Environment. The third goal of the Act is to create the necessary instruments for environmental management, such as a system for the evaluation of environmental impacts, quality-control regulations, as well as requirements for pollution prevention and decontamination planning.

A small number of provisions (92 permanent and 7 transitory articles) provide guiding principles, basic conceptual definitions, and the key mechanisms needed for modern and comprehensive management of the environment. While supporting the above-mentioned goals, the LBMA makes possible the development of consistent and realistic environmental policies through application of the principles of public participation, pollution prevention, progressive action, and accountability.

The General Provisions section contains the basic articles of the Act. The second article, for example, includes several definitions, the most important of which are contained in Annex 5.

2.2 The National Commission for the Environment (CONAMA) and Regional Commissions for Environment (COREMAS)

The LBMA accords environmental responsibilities to all government ministries, and established the National Commission for Environment (CONAMA) to fulfill a coordinating role. CONAMA's structure acknowledges the horizontal character of the issues it deals with, and the active role that various Ministries have to play in the development and enforcement of environmental policies. CONAMA is a legal entity with its own capital resources, functioning under the supervision of the President of the Republic through the Ministry General Secretariat of the Presidency. The Minister of Secretary General of the Presidency leads CONAMA's Board of Directors, which consists of Ministers from 13 departments.

An Advisory Council is used by the Board to gather a cross-section of opinions, and to fulfill other legal requirements. Advisory members are drawn from business and labour, and non-government organizations devoted to the protection and study of the environment.

CONAMA is managed by an Executive Director and administered through a decentralized public service via Regional Commissions for Environment (COREMAS). The Executive Director is responsible for the implementation and enforcement of the provisions of the law, and for carrying out the agreements and guidelines set by CONAMA's Board of Directors. COREMAS are the organizations through which the mandate of CONAMA is carried out in Chile's 13 administrative regions.

Each COREMAS is governed by a group consisting of the Regional Governor (Intendente), who is also the Chair, the governors and regional secretaries of the Ministries sitting on the Board of Directors, four regional councilors, and a Regional Director of CONAMA. COREMAS have responsibilities under laws of the republic but may also develop regional policies for the protection and enhancement of the local environment.

3.0 Regulations, Control and Enforcement of Environmental Legislation

3.1 Institutional Framework

In Chile, environmental enforcement is undertaken on a sectoral basis, and is primarily the responsibility of individual government Ministries to effect. CONAMA, particularly its Board of Directors, is responsible for the development and application of mechanisms to facilitate a coordinated regulatory and enforcement response. These mechanisms, (coupled with the management tools of the National Environmental Management System and a public participation process) allow for the effective design and implementation of a comprehensive environmental management system. Specific responsibilities of CONAMA include the following:

I. to develop national policies and a strategic environmental management strategy;

II. to act as an advisory body specialized in the analysis, communication and coordination of environmental issues;

III. to periodically inform the President of the Republic about the enforcement of and compliance with current environmental legislation [Art. 70];

IV. to promote the coordination of environmental controls and enforcement activities between public organizations and municipalities [Art. 72, (e)]. (This power is conferred to the Executive Director since decisions of the Board must be implemented by Department Management or a designated officer thereof);

V. to administer and coordinate a process for Environmental Impact Assessment [LBMA, Art. 8, subsection 3 and Art. 70 (e)];

VI. to ensure standardization of the criteria, requirements, conditions, background certificates, processes, technical requirements and environmental procedures of environmental nature required by the Ministries and other public entities [Art.23, first subsection of LBMA];

VII. to enforce compliance with the norms and conditions under which an Environmental Impact Assessment is carried out [Article 64]. (In cases of non-compliance, the Regional or National Commission for Environment may issue a warning, impose fines up to the equivalent of five hundred taxation units monthly, and cancel approval or acceptance of the Assessment, without detriment to subsequent civil or penal actions.)

Projects and activities falling under the System of Environmental Impact Assessment have greater approval and compliance requirements than those not subject to the System. An entire project, not just particular elements or impacts thereof, must be considered in the assessment, including matters of a qualitative nature that may not be specifically regulated. Projects and activities approved under the Environmental Impact Assessment System require an integrated enforcement approach and have a very different dynamic to the norm. For instance, where a pollution prevention or decontamination plan has been approved, all subsequent activities must comply with the requirements of that plan, and approval of the whole does not allow for deviation from the plan on certain items [Article 46]. Inspections under the System of Environmental Impact Assessment are conducted by Regional Commissions for Environment, or by the National Commission for Environment if the plan comprises more than one region.

CONAMA also possesses coordination powers for dealing with environmental matters not related to the above Evaluation System of Environmental Impact Assessment, such as the management of natural resources.

In summary, two key powers of CONAMA are to coordinate and guide the enforcement process under the System of Environmental Impact Assessment, and to ensure the enforcement of pollution prevention and decontamination plans.

At the same time, there are several other agencies of the State Administration that have enforcement powers concerning environmental issues. These entities develop their own programs, training activities, and action plans, etc. The most important players are the

following:

The State Customs Office (Dirección General de Aduanas) is in charge of controlling the import and export of merchandise harmful to the environment and to human health along coastal and land borders, and at airports of the Republic.

The Chilean Police (Carabineros de Chile) has specific police duties, especially in forestry and hunting matters.

Municipalities (Municipalidades) enforce household waste and environmental sanitation at the local level, to meet the needs of the community.

The Agriculture and Livestock Service (Servicio Agrícola y Ganadero) contributes to the agricultural development of the country by conserving and preserving renewable natural resources required for agricultural output. It is also responsible for ensuring compliance with legal standards and regulations on the prevention and eradication of plant pests and contagious animal diseases laws governing hunting and pesticides for agricultural use.

The National Fisheries Office (Servicio Nacional de Pesca) is in charge of compliance promotion and enforcement of the General Fisheries and Agriculture Act; and is responsible for the protection of marine life in all of Chile's water systems.

The State Waters Office (Dirección General de Aguas) protects and plans water resources, and is responsible for ensuring compliance with the Water Code.

The State Office for Territorial Waters and Merchant Navy (Dirección General del Territorio Marítimo y Marina Mercante) is responsible for preventing marine contamination and protecting the aquatic environment. It does this by enforcing the Navigation Act, and regulating the discharge of industrial effluents to watercourses. It must also regulate, enforce, and comply with all current national guidelines and with the International conventions signed by Chile concerning the prevention of marine contamination and the protection of the aquatic environment.

The goal of the Metropolitan Health Environment Service (SESMA - Servicio de Salud Metropolitano de Ambiente) is to "protect public health from all environment related risks". SESMA is in charge of implementing the Health Code, its regulations, and decrees in all metropolitan areas. It also enforces compliance with standards for atmospheric emissions from urban areas and is in charge of controls over solid waste.

Health Services (Servicios de Salud) has a department in charge of environmental issues—the Department for Environmental Programs. This department develops environmental programs for Health Services and supervises, coordinates and evaluates the activities of this service. It also cooperates in the preservation, improvement and restoration of the quality of the environment.

The National Geology and Mining Service (SERNAGEOMIN - Servicio Nacional de Geología y Minería) is in charge of the regulation of dams and reservoirs (which can cause environmental damage), and the development of applied geologic research initiatives to provide technical and scientific information related to natural phenomena that can be used as a basis for planning in various regions of the country.

The Ministry of Transport and Telecommunications (Ministerio de Transporte y Telecomunicaciones) is responsible for compliance verification and the enforcement of regulations governing emissions from motor vehicles.

The Superintendence of Electricity and Fuel (SEC - Superintendencia de Electricidad y Combustibles) is responsible for enforcing compliance with the rules, regulations and service contracts in respect of electricity and gas supply as well as regulating and controlling the quality of fuels.

The Superintendence of Sanitation Services (SSS - Superintendencia de Servicios Sanitarios) is in charge of enforcing the proper provision of sanitation services. It develops and enforces technical standards regarding sanitation and the control of industrial liquid waste.

The mission of the National Woodland Corporation (CONAF - Corporación Nacional Forestal) is the conservation, protection, management, and sustainable use of Chile's renewable resources. In order to be able to carry out its objective, this institution is authorized to enforce forestry management programs.

The National Heritage Council (Consejo de Monumentos Nacionales) is in charge of protecting areas, archeological remains, buildings or objects of historic or artistic importance. This Council is a technical body run by the Ministry of Education.

3.2 Methodology

Environmental evaluation and enforcement activities are usually simultaneous, and, on occasion, are considered to be very similar. Nevertheless, it is necessary to describe them individually. The *Methodology for Environmental Control and Inspection Plans and*

Environmental Audits, CONAMA, 1995 distinguishes these activities as follows:

I. "Control" refers to one or more measures that, when properly coordinated and respectful of environmental principles, norms and regulations, can help to ensure that an activity achieves the required standards, instructions or plans.

II. "Enforcement" refers to work done in accordance with the law and/or decree by which public entities supervise compliance with environmental legislation.

At present, there are three types of enforcement methods applied to activities that may harm the Chilean environment:

I. "Direct" enforcement is carried out by a government body according to its mandate issued under a legal provision. Public officials cannot delegate this administrative authority.

II. "Indirect" enforcement activities are carried out by government bodies that have jurisdiction or legal authority over some issues (e.g., sectoral), but not over specific environmental issues. These bodies, in effect, carry out *control* activities on environmental issues for which they have not been provided legal authority by entraining the assistance of other bodies that have legal authority over certain aspects of the issue.

III. "Mixed" enforcement activities are carried out by more than one government body, which individually may not possess authority over the specific environmental matter at issue. For instance, inspections would be coordinated and resources such as equipment, employees, financial resources, and technical expertise, would be shared in undertaking the enforcement action.

CONAMA is presently developing a basic framework of environmental regulations to address weaknesses and shortfalls affecting the national inspection system. The goal is to strengthen environmental enforcement duties within various sectors at the national and regional level, and to foster greater inter-institutional coordination. Special attention is being given to enforcement of the Evaluation System of Environmental Impact Assessment.

The government's environmental policy is aimed at restructuring and modernizing the environmental enforcement system through development of mechanisms such as auto-regulation, compulsory declaration of pollutant emissions, grading of industrial activities at a national level, and the implementation of a comprehensive inspection system.

CONAMA is also examining the development of voluntary and economic mechanisms.

3.3 Procedures and Plans or Programs for Compliance with Environmental Legislation

One of the objectives of the Environmental Policy for Sustainable Development is to strengthen environmental institutions at the national and regional level. One of the areas of work undertaken was to develop plans and programs for the continuous training of officials responsible for the National Environmental Management System. This is being carried out through the development of training programs, scholarships, short-term courses and post-graduate education.

Another initiative undertaken was the creation of the National Environmental Information System (SINIA), an important tool used to enable easier access to information and improve institutional coordination on environmental issues. It is a decentralized system that supports environmental management and decision-making at the sector and regional level. It is coordinated by CONAMA and relies on information received from public institutions with environmental competence, and generated through CONAMA's activities.

Initiatives and tools were designed to help promote global and sectoral efforts on environmental issues. The best example is the creation of a consolidated environmental budget that includes the expenses of all ministries and other government bodies that monitor environmental management. This resulted in a permanent accountability mechanism that enables monitoring of the conditions and measures under which projects submitted to the Evaluation System of Environmental Impact Assessment are approved. Created and implemented during the second semester of 1998 and with the help of various mechanisms, 94 projects under way or in operation were monitored in Chile that year. Furthermore, a study was conducted to estimate the budget expended by 14 ministries and other state departments in implementing the National Environmental Management System.

The structure of the Estimated Global Environmental (PAGE) consolidated budget enables response to three basic questions concerning the National Environmental Management System.

I. the total resources assigned by the public sector to various activities of environmental management, including capital and operational expenses.
II. the type of environmental management activities to which the budget resources were assigned and the total amount.
III. the institutional distribution of the budget resources assigned, taking into account

ministries and other public agencies belonging to central administration or to decentralized bodies.

A connection can be drawn between the historic background and the Environmental Policy for Sustainable Development. Analysis conducted to date indicates that the majority of resources assigned to environmental management have been directed at three key objectives which are: to restore and improve environmental quality; to prevent environmental deterioration; and to encourage the protection of environmental heritage and the sustainable use of natural resources

In January 1993, the Ministry General Secretariat of the Presidency and the Service for the Health of the Environment of the Metropolitan Region (SESMA) signed an agreement to jointly implement a Program for the Control of the Emissions from Permanent Sources (PROCEFF). This agreement was the first step required to implement recommendations contained in *Development of the State Capacity for Control of Permanent Sources,* a study required by the Special Commission for Decontamination of the Metropolitan Region (CEDRM). The study recommended a control program for permanent sources, including the institutional organization, the work methodology, and the technical, human, and financial resources needed to carry it out.

Future plans call for the development of the following:

I. Management Plans for the effective use of renewable natural resources while preserving their capacity to regenerate and biological diversity.

II. Prevention Plans to deal with contamination issues. All areas designated as "latent" must be addressed in the prevention plans. The objective of these plans is to prevent contamination levels from exceeding those stipulated by the environmental quality standards.

III. Decontamination Plans that would be applicable to areas declared as "saturated". Their purpose is to reach the levels stipulated by the environmental quality standards.

4.0 Compliance with the Environmental Legislation in Chile: towards a comprehensive approach

As this document outlines, environmental control in Chile was the responsibility of several public offices, and sector based. Enforcement programs were implemented in diverse areas and, in certain cases, functions were duplicated or difficult to undertake.

In recent years, the need to organize this process into a coordinated, consistent and comprehensive system became apparent.

In this context, and that of the present Evaluation System of Environmental Impact (SEIA), the demands placed on CONAMA regarding control activities have grown. Consequently, CONAMA developed, in collaboration with various ministries and departments, an action plan regarding enforcement policies. The general goals of the plan are the following:

I. To design and implement a coordinated enforcement system in Chile that can: evaluate compliance with environmental requirements and regulations through the monitoring and enforcement of decontamination plans; develop quality and emission standards (primary and secondary); and review projects that have already been approved.

II. To develop an environmental enforcement policy proposal, which includes medium and long-term objectives that foster the protection of environmental heritage in accordance with international agreements signed by Chile.

III. To design a system able to promote compliance with environmental requirements within the national productive sector.

In order to achieve these goals, CONAMA's Board of Directors approved the establishment of Environmental Enforcement Operating Committees at both the national and regional level in June 1999. As of that September, thirteen Regional Committees were established throughout the country, each with representation from all state bodies having environmental enforcement powers. Regional CONAMA Directors are tasked with coordinating and facilitating the administrative activities of the Committees, such as enforcement, document verification, and environmental audits.

The National Environmental Enforcement Operating Committee is to include all central public bodies with environmental enforcement powers. The Committee will be coordinated by the Executive Management of CONAMA, which will facilitate implementation of enforcement activities and compliance with environmental commitments and regulations assigned under "intra-regional" projects.

In accordance with the first main point of the policy and as stipulated in Art. 64 of Law 19.300, a proposed follow-up and enforcement process has been developed for the Environmental Impact Assessment System (SEIA). The process focuses on the following issues:

- Compliance with standards and conditions established for the approval of environmental impact studies and declarations.
- Optimization and/or improvement of the environmental performance of projects or activities submitted to the SEIA, thereby complementing the existing assessment system by ensuring that ongoing projects are monitored systematically.

The objective of the enforcement program is therefore to follow up on all the projects submitted to the Environmental Impact Assessment System. Priority will be given to larger or more complicated projects so as to achieve a high level of compliance, in the medium term, with commitments required under the environmental assessment.

In 2000, a total of 416 projects were submitted for enforcement; environmental enforcement agencies and CONAMA conducted on-site inspections on 334 of these projects.

A total of 534 projects, including intra-regional projects, are scheduled for enforcement in 2001. This objective could rise by approximately 10%.

In accordance wit the second main point of the policy, efforts were made to develop a proposed enforcement policy, which basically includes the most relevant issues raised by the Council of Ministers, and that will focus primarily on a management development plan.

On August 23 of this year, the Comisión Nacional del Medio Ambiente [National Environmental Commission], under the auspices of the Canada – Chile Agreement on Environmental Cooperation, conducted a workshop entitled "Sistemas de Información en la Fiscalización Ambiental y su Posibilidad de Implementación en Chile [Environmental Enforcement Information System and Possibility of Implementation in Chile]". Participants included representatives from Environment Canada, public enforcement agencies and CONAMA environmental authorities.

Participants at the workshop studied and extensively reviewed NEMISIS. This demonstrated our country's profound interest in continuing to work with Environment Canada to implement this system in our country. There is no doubt the system will make a major contribution to national environmental enforcement efforts, in particular by providing efficient strategic information and facilitating implementation efforts; it may also help optimize public resources both human and financial. CONAMA made a commitment to begin developing the Sistema de Información sobre Fiscalización

Ambiental Nacional [National Environmental Enforcement Information System], which is currently at the evaluation phase.

D. CONCLUSION

As might be expected of two countries with different histories and significant geographic separation, the foregoing descriptions demonstrate several differences between the Canadian and Chilean constitutional frameworks, legislation, and enforcement systems. However, many similarities are also evident.

The constitutions of the two countries, arising from separate historical traditions, are fundamentally different. The constitution of Chile provides for a unitary system of government, whereas Canada's constitution establishes a federal system with responsibilities divided or shared between federal and provincial/territorial levels of government. However, neither the Chilean nor Canadian systems of government explicitly or implicitly assign responsibility for pollution and wildlife to one particular governmental entity.

In Canada, responsibility is shared not only between the different levels of government, but also among a host of federal departments, provincial ministries, and municipal authorities. In Chile, responsibilities are shared between numerous state departments, local authorities, and CONAMA. Environment Canada differs from its counterpart CONAMA in that EC has a direct operational enforcement role. However, because of the diffusion of legislative and enforcement responsibilities within Canada, EC must also play a strong coordinating role, somewhat comparable to that of CONAMA. Both EC and CONAMA ensure that a wide range of pollution and wildlife laws are adequately implemented and enforced across their respective country.

Also similar is the fairly long history that both Chile and Canada have with environmental legislation and instruments (e.g. Law No. 3,133 of 1916 in Chile and the Migratory Birds Convention, signed in 1916 in Canada). Both countries have undergone and are continuing through a period of intense legislative activity. As a result, CONAMA and EC are in the process of implementing relatively new environmental impact assessment legislation, revising existing laws, and drafting new environmental legislation and regulations. Furthermore, both agencies are undertaking reviews of their environmental enforcement practices and implementing new processes aimed at improving the efficiency and effectiveness of their enforcement programs.

Therefore, as Canada and Chile enter the new millenium in partnership under the CCAEC, they are able to not only share their experiences in pursuing common approaches, but also to look at instances where wholly different means to resolve environmental issues have been chosen in each country.

ANNEX 1:
LEGISLATIVE FRAMEWORK RELEVANT TO ENFORCEMENT AND COMPLIANCE PROMOTION

Environmental Management and the Canadian Constitution

In Canada, two orders of government have the major legislative and regulatory authority over the environment, and wildlife and its habitat, as well as an important leadership role in integrating the environment and the economy. In the Canadian Constitution, the "environment" as such is not mentioned. However, in practice, each order of government has exercised its own jurisdictional powers, that are important for effective environmental management, including those related to the enforcement of their legislation.

Responsibilities are based on the allocation of powers related to the environment. Federal environmental responsibility has been derived from a number of powers, especially related to fisheries, migratory birds, inter-provincial and international trade and commerce, criminal law, and peace, order and good government. Key provincial environmental responsibilities derive from, among other things, jurisdiction over the management of resources, property and civil rights, and local works and undertakings.

The shared nature of environmental jurisdiction makes close cooperation between the federal, provincial and territorial governments vital to the success of national environmental and wildlife management policies and objectives. Ministerial councils have been set up to facilitate this cooperation. The Canadian Council of Ministers of the Environment (CCME), for example, is composed of federal, provincial and territorial Ministers responsible for environmental protection. Acting as equal partners, Ministers use the Council to coordinate federal and provincial policies, to resolve inter-jurisdictional problems, to coordinate action on national issues and to exchange information. Similarly, the Wildlife Ministers Council of Canada (WMCC) does the same for wildlife issues.

The federal government recognizes that aboriginal peoples of Canada have an important role to play in environmental matters.

Definitions

Compliance for purposes of this and other Canadian reports on this subject means the state of conformity with the law.

Compliance with Canadian environmental laws is secured through two types of activity: promotion and enforcement.

Enforcement activities include:

- Inspection and monitoring to verify compliance;
- Investigations of violations;
- measures to compel compliance without resorting to formal court action, such as directions by inspectors and Ministerial orders; and
- measures to compel compliance through court action, such as injunctions, ticketing, prosecution, court orders upon conviction and civil suits for recovery of costs.

The International Environmental Regime

Environmental issues and solutions are becoming increasingly internationalized. Canada is party to a growing number of international agreements, treaties or conventions that influence its domestic legislation and policies. These arrangements cover a wide range of issues, including endangered species (Convention on International Trade in Endangered Species of Flora and Fauna – CITES), international trade in hazardous waste (the Basel Convention), ozone-depleting substances (the Montreal Protocol), biodiversity (the Biodiversity Convention), migratory birds (Migratory Birds Treaty), and various issues related to the law of the sea (the UN Convention of the Law of the Sea – UNCLOS).

Federal Environmental and Wildlife Legislation

The federal government administers a wide range of laws containing environmental protection provisions designed expressly to protect the environment and to regulate specific activities or businesses. As well it has responsibility for laws aimed at protecting wildlife and its habitat. Some statutes, such as the Canadian Environmental Protection Act (CEPA 1999), are designed to prevent pollution of all media, including air, water and land, and regulate all phases of the life cycle of those products identified in CEPA 1999 from their import and manufacture to their ultimate disposal. Some, like the Arctic Waters Pollution Prevention Act, the National Parks Act, the Canada Wildlife Act, the Migratory Birds Convention Act, the Fisheries Act and the Oil and Gas Production and Conservation Act, protect specific natural resources. Some, like the Canada Water Act, are ecosystem planning tools. Some regulate specific hazardous products and activities, such as the manufacture of pesticides and radiation-emitting devices, the modification of weather, the installation of air pollution equipment on motor vehicles, the production of atomic energy, and the transportation of dangerous goods. Others regulate transportation in general or specific modes of transportation, such as railways, shipping or aeronautics. Collectively, these statutes and their regulations address thousands of situations, as varied as the subject matter of their respective statutes.

Among others, Environment Canada administers CEPA 1999, the Canada Wildlife Act, the Migratory Birds Convention Act, and the Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act (WAPPRIITA). Under an administrative agreement with the Department of Fisheries and Oceans, Environment Canada also has primary responsibility for the pollution prevention provisions of the Fisheries Act. These deal with deleterious substances that eventually find their way into

waters frequented by fish.

This report focuses primarily on the enforcement by Environment Canada of CEPA 1999, the pollution prevention provisions of the Fisheries Act, the Migratory Birds Convention Act, the Canadian Wildlife Act and WAPPRITTA. The relevant provisions of the Acts addressed in this report are summarized below.

The Canadian Environmental Protection Act (CEPA)

CEPA was passed, as a cornerstone of federal environmental law, in 1988. After a five-year review, the revised Canadian Environmental Act, or CEPA 1999, was proclaimed into law on March 31, 2000.

This new Act is designed to provide strong protection for the environment and for human health through science based pollution prevention strategies. CEPA 1999 gives the federal government significant powers to protect Canadians and the natural environment from pollution, particularly pollution caused by toxic substances. Pollution prevention is the cornerstone of CEPA 1999, which provides the government with new tools to protect the environment and human health. Under the legislation, all substances currently in use in Canada are now categorized to determine if they are toxic. CEPA 1999 also establishes strict deadlines for controlling toxic substances, and requires the virtual elimination of the most dangerous toxic substances.

Provisions in the Act related to the Environmental Compliance Orders came into force on March 31, 2001. These orders can be used to put an immediate stop to a CEPA 1999 violation, to prevent a violation from occurring in the first place, or to require action to correct a violation. The Government's authority to determine if other federal Acts meet the CEPA 1999 requirements for notice and assessment of toxicity of new substances and biotechnology products will be proclaimed on September 13, 2001. This will allow time for the assessment with the new standards required by Parliament.

The legislation provides Environment Canada enforcement officers with significant new powers to deal with polluters who break the law. CEPA 1999 provides authority to inspect any place where there might be a substance or activity regulated under the Act. Enforcement officers have the authority to seize evidence related to a contravention. In addition, CEPA 1999 includes sentencing criteria to promote consideration by the courts of matters such as the cost to remedy the damage done to the environment. There are also Environmental Protection Alternative Measures (EPAMs) to allow for negotiated settlements that avoid the time and expense of lengthy court cases. CEPA 1999 explicitly excludes certain serious offences from being eligible for EPAMs.

CEPA 1999 also helps Canada meet several of its international environment obligations, and provides the right-to-sue if the federal government fails to enforce the Act.

The Fisheries Act

Environment Canada administers and enforces the pollution prevention provisions of the Fisheries Act. It includes subsection 36(3), which prohibits the direct or indirect deposit of substances deleterious to fish into water frequented by fish; subsection 36(4), which permits deposits authorized by regulations; and subsection 36(5), which describes the types of regulations that can be made.

Under subsection 36(5), regulations can be made specifying deleterious substances authorized for deposit, waters where they may be deposited, operations pertaining to authorized deposits, quantities or concentrations of deleterious substances authorized for deposit, people who may authorize deposits, and other conditions. Other sections provide powers to inspect, request plans and specifications for works and undertakings that affect or potentially affect fish and fish habitat, and develop orders to control the depositing of deleterious substances. The Minister of Fisheries and Oceans is accountable to Parliament for the administration of the Fisheries Act and its regulations.

The Migratory Birds Convention Act (MBCA) (1994)

The MBCA aims to conserve the diversity of migratory birds in Canada, and to maintain safe population levels while preserving social, cultural and economic opportunities for the benefit of present and future generations. Unlike CEPA 1999 and the pollution prevention provisions of the Fisheries Act, the MBCA deals with the conservation of resources. It protects many species of migratory birds that are hunted across Canada. It also protects non game and insectivorous migratory birds. To meet the requirements of the Convention there are a number of regulations that protect all migratory birds and, in particular, ducks, geese and other game birds. These provisions deal with such things as bag limits, possession limits and requirements, baiting, retrieval of birds, hunting methods, hunting seasons, bird sanctuaries, and the sale of birds. The possession of migratory birds by aviculturists, taxidermists and scientific and educational organizations is also regulated.

The Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act (WAPPRIITA)

The WAPPRIITA controls international trade and inter-provincial transport in wild animals and plants, their parts and products in order to better conserve Canadian and foreign species, and to protect Canadian ecosystems from the introduction of harmful wild species. The Act prohibits the importation of wildlife taken illegally from another country, and implements Canada's obligations under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The Act is administered in cooperation with other federal departments (Fisheries and Oceans Canada, the Canadian Food Inspection Agency, Canada Customs and Revenue Agency and the Royal Canadian Mounted Police) and provincial/territorial wildlife

agencies.

The Canada Wildlife Act (CWA)

The CWA provides the authority for the acquisition of lands by the Minister of the Environment for the purposes of wildlife research, conservation, and interpretation. The Act also provides for the establishment of protected marine areas. The Minister may enter into an agreement with any province for wildlife research, conservation, and interpretation, including measures to protect any wildlife in danger of extinction. National Wildlife Areas are created and managed pursuant to regulations made under this Act. Designation as a National Wildlife Area helps ensure that lands of national importance are protected.

ANNEX 2

ENVIRONMENTAL OBJECTIVES OF ENFORCEMENT INSTITUTIONS IN CHILE

INSTITUTION	LEGISLATION	INSTITUTIONAL OBJECTIVES
Customs	DFL Nº 30 of 13/04/83	· To control the traffic of merchandise harmful to the environment and to human health at land and coastal borders, and at airports of the Republic of Chile.
CONAF	Law 18.348 of 27/12/1984 SD 728 of 1970	· To contribute to the protection, conservation, increase, management and exploitation of forests, in order to achieve a rapid growth and development of productive forestry activities and, in a manner compatible with the protection and conservation of forests and their environment.
DGA	Law 16.640 of 28/7/67	· To protect and plan water resources. · To ensure that the provisions of the Water Legislation are respected.
DIRECTEMAR	DS Nº 1.340, DS Nº 1 Ministry of National Defense, empowered under DL 2.222	· To apply and enforce the Navigation Law, as well as applicable international agreements and legal standards and regulations · To preserve aquatic environment and navigation on waters under its jurisdiction.
Municipalities	Organic Law of Municipalities Nº 18.695 of 31/3/88	· To meet the needs of the community and ensure its participation in the economic, cultural and social process. · To ensure compliance with the current environmental standards in accordance with the law and regulations. · To organize educational activities for the prevention of damage to the environment.
Ministry of Transport, Enforcement Department	Budget Law,1993	· To control the compliance with rules, regulations and contracts regarding public transportation. · To control external aspects of transport industry, mainly emissions of pollutants. · To open channels for community participation in order to receive complaints and be able to solve them. · To analyze and monitor the transport industry in order to identify distortions and recommend to the Ministry measures to eliminate them.
SAG	Law 18.775	· To contribute to the agrifood development of the country through the protection and conservation of renewable natural resources that affect the agrifood output of the country. · To ensure the compliance with the legal standards and regulations on the prevention and eradication of plant pests and contagious and diseases transmissible by animals. · To promote measures aiming at ensuring soil and water conservation, avoid erosion and improve fertility and drainage.
SERNAGEO-MIN	DL 3.525 26/11980	· To control industrial effluents which may cause environmental damage. · To develop applied geological research that can provide technical and scientific information on natural phenomena and can serve as a basis for land use planning.
SERNAP	DFL Nº 2.442 of 1978 and DFL Nº 1 of 1992	· To implement the national fish policy and its enforcement, in particular ensure the compliance with the legal standards and regulations regarding fisheries, underwater fishing and other forms of exploitation of hydrobiologic resources.
Health Services	DL Nº 2.763, of 1979	· To protect human health from potential environmentally related risks in the environment. · To ensure compliance with the Health Code, its regulations and decrees.

SESMA	Law Nº 18.122 of 1982	· To protect human health from potential risks existing in the environment. · To ensure compliance with the Health Code, its regulations and decrees. · To enforce the Standards on atmospheric emissions from stationary sources in the Metropolitan Area. · To ensure compliance with environmental standards regarding the air from stationary sources, and thereby strengthen their enforcement. · To control solid waste.
SISS	Law Nº 18.902 of 27/01/90	· To inspect industries providing sanitary services. · To interpret and ensure compliance with standards regarding sanitary services. · To develop technical standards regarding the design, construction and operation of sanitary services. · To control industries producing liquid waste. · To develop technical standards regarding the discharge of liquid effluents. · To impose sanctions to sanitary services companies.
Ministry of Public Works, Highway Management	Law 15.840, Art. 16 (amendment of Art. 19 of Law 18.267, Art. 2 of Law 18.373, DFL 205 of 1976.	· To coordinate actions that lead to an adequate conservation of the environment in all aspects related to road works. · To provide advice at a managerial level on environmental matters and propose the classification of projects from an environmental point of view. · To promote an adequate coordination between the units of the Highway Management Department, international credit banks and other bodies from within or outside the Ministry of Public Works, taking into consideration the legislation and current standards in this area. · To propose standards, procedures and methodologies for the study and mitigation of environmental impacts. · To propose and carry out the supervision, follow-up and monitoring of environmental aspects of building and operation sites, and propose specific measures to control negative impacts associated to the project.

ANNEX 3
ENVIRONMENTAL ENFORCEMENT PER INSTITUTION IN CHILE

INSTITUTION	ENVIRONMENTAL COMPONENTS								EMISSIONS TO THE ENVIRONMENT				
	Air	Surface waters	Under-ground waters	Marine waters	Soil	Flora	Fauna	Land-scape	Forests	Atmos-pheric Emissions	Industr-ial Efflu-ents	Solid waste	Noise and vibra-tions
Customs						X	X					X	
CONAF						X	X	X	X				
DGA		X	X										
DIRECTEMAR		X		X					X		X		
Enforcement Department of MINTRATEL										X			
Municipalities		X			X					X	X	X	X
SAG	X	X	X		X	X	X			X			
SERNAGEOMIN					X							X	
SERNAP		X		X			X						
Regional Health Services	X	X	X	X						X	X	X	X
SESMA	X	X	X							X	X	X	X
SISS										X	X		
Highway Department of the Ministry of Transport						X		X					

ANNEX 4:
SELECTION OF CHILEAN ENVIRONMENTAL REGULATIONS & INTERNATIONAL AGREEMENTS

Internal

I. Law No. 19.300, General Environmental Law, Official Gazette, 09/03/94
II. Supreme Decree (DS) No. 86, Ministry General Secretariat of the Presidency, approves the Regulations for the consultative Council of the National and the Regional Commissions for the Environment, Official Gazette, 08/05/95
III. Supreme Decree (DS) No. 30, Ministry General Secretariat of the Presidency, approves the Regulations for the System for Evaluation of Environmental Impact, Official Gazette, 03/04/97
IV. Supreme Decree (DS) No. 93, Ministry General Secretariat of the Presidency, approves the Regulations for the Environment Quality and Emission Standards, Official Gazette, 26/10/95
V. Supreme Decree (DS) No. 94, Ministry General Secretariat of the Presidency, approves the Regulations that establish the proceedings and stages for the development of Prevention and Decontamination Plans, Official Gazette, 26/10/95
VI. Supreme Decree (DS) No. 351, 1992 of the Ministry of Public Works, approves the Regulations for the neutralization and purification of industrial liquid effluents, Official Gazette, 23/02/93
VII. Executive Decree (DFL) No. 382, 1988 of the Ministry of Public Works, General Act for Sanitation Services, Official Gazette, 21/06/89
VIII. Supreme Decree (DS) No. 1, 1992 of the Ministry of National Defense (Navy), Regulations for Water Contamination, Official Gazette, 18/11/92
IX. Decree Law No. 3.557,1981, on regulations regarding agricultural protection, Official Gazette, 09/02/81
X. Law No. 18.892, General Fisheries and Fish-farming, Official Gazette, 23/12/89
XI. Law No. 17.288, on National Heritage, Official Gazette, 04/02/70
XII. Law No. 18.302, on Nuclear Safety, Official Gazette, 02/05/84
XIII. Law No. 18.248, Mining Law, Official Gazette, 14/10/83 (134N)
XIV. Executive Decree (DFL) No. 725, Sanitation Law, Official Gazette, 31/01/68
XV. Decree Law (DL) No. 3.557,1981, on regulations regarding agricultural protection, Official Gazette, 09/02/81
XVI. Supreme Decree (DS) No. 4, 1992, of the Ministry of Health, standards for emissions from individual or groups of stationary sources, Official Gazette, 02/03/92
XVII. Law No. 18.164, Customs regulations and changes to the pertaining legislation regarding toxic and dangerous substances dangerous to the health, Official

Gazette, 17/09/82

International Agreements

I. The Vienna Convention and the Montreal Protocol on Ozone Depleting Substances.
II. The RAMSAR convention (Wetlands)
III. The CITES Convention (Trade of protected species)
IV. The Convention on Rights of the Sea
V. The Antarctic Treaty
VI. The Basel Convention (Transportation of Hazardous Waste)
VII. United Nations Framework Convention on Climate Changes
VIII. United Nations Convention on Biological Diversity
IX. United Nations Convention on Desertification
X. The London Convention (Disposal of wastes at sea)

ANNEX 5:
KEY DEFINITIONS FROM THE 2ND ARTICLE OF THE LBMA

Environment: the global system formed by natural and artificial elements of physical, chemical and biological nature, social and cultural elements and their interaction in continuous transformation caused by human or natural intervention, that rules and determines the existence and development of life in its various aspects.

Sustainable Development: the process of sustained and equitable improvement of the quality of life of people, based on adequate environmental conservation and protection measures, so that it would not affect the future of next generations.

Conservation of Environmental Heritage: the rational use and exploitation or the restoration, if case be, of environmental elements, especially those specific to the country, that are unique, rare or representative in order to ensure their survival and their regeneration capacity.

Contamination: the existence in the environment of substances, elements, energy of a combination thereof in higher or lower concentration and for a period of time longer of shorter than that established by the current legislation.

Environmental Damage: all loss, decrease, damage or harm done to environment, or to one or more of its components.

Protection of Nature: the totality of policies, plans, programs, standards and actions meant to improve the environment and to prevent and control its damage.

Natural Resources: the environmental components that can be used by human beings in order to satisfy their necessities or spiritual, cultural, social or economic interests.

Restoration: the action of restoring the environment, one or more of its components, to a quality similar to the one they has previous to being damaged, or if this is not possible, of restoring its basic characteristics.

ANNEX 6:
CANADIAN CONTACTS

ENVIRONMENT CANADA

CONTACTS				
Titles	**H.Q.**	**Region**	***Telephone***	***Fax***
Director General, National Programs Directorate	x		*(819) 997-2019*	*(819) 997-0086*
Acting Director, Enforcement Branch	x		*(819) 953-1173*	*(819) 994-0724*
Chief, Strategies & Implementation	x		*(819) 994-3206*	*(819) 953-3459*
Chief, Inspections & Investigations	x		*(819) 994-2801*	*(819) 953-3459*
Chief, Training and Learning Division	x		*(819) 994-4772*	*(819) 953-3459*
Chief, Wildlife Division	x		*(819) 953-4383*	*(819) 953-3459*
Chief, Information Management Division	x		*(819) 953-3883*	*(819) 994-0724*
Manager, Enforcement and Emergencies Division		**Pacific and Yukon**	*(604) 666-0002*	*(604) 666-6858*
Chief, Pollution Enforcement Division		**Prairie and Northern**	*(403) 951-8861*	*(403) 495-2451*
Manager, Emergencies & Enforcement Division (Administration)		**Ontario**	*(416) 739-5897*	*(416) 739-4903*
Manager, Emergencies & Enforcement Division		**Quebec**	*(514) 283-0181*	*(514) 496-2087*
Manager, Office of Enforcement		**Atlantic**	*(902) 426-1925*	*(902) 426-2062*

ANNEX 7
CHILEAN CONTACTS

INSTITUTION	TELEPHONE	FAX
Servicio Nacional de Geología y Minería	56 2 737 5050	56 2 737 2026
Dirección General del territorio Marítimo y Marina Mercante	56 32-208001	56 32-255912
Servicio Nacional de ADUANAS	56 32-200500	56 32-212841
Contraloría General de la República	56 2 6724212	56 2 672 5565
Ministerio de Salud Pública	56 2 6394001	56 2 6300272
Ministerio de Bienes Nacionales	56 2 6339305	56 2 6336521
Superintendencia de Servicios Sanitarios	56 2 3824000	56 2 3824003
Comisión Chilena del Cobre	56 2 3828100	56 2 3828300
Ministerio de Defensa Nacional, Subsecretaria de Marina	56 2 2221202	56 2 6345339
Ministerio de Minería	56 2 671 2488	56 2 6963820
Servicio Nacional de Pesca	56 2 6960784	56 2 6960784
Ministerio de Transporte y Telecomunicaciones	56 2 6726503	56 2 6995138
Corporación Nacional Forestal	56 2 3900000	56 2 6715881
Dirección General de Aguas	56 2 6985341	56 2 6985341
Ministerio de Economía, Fomento y Reconstrucción	56 2 6725522	56 2 6726040
Servicio Agrícola y Ganadero	56 2 6982244	56 2 6721812

CANADA-CHILE AGREEMENT
ON ENVIRONMENTAL COOPERATION

PUBLIC PARTICIPATION IN ENVIRONMENTAL MANAGEMENT IN CANADA AND CHILE

October, 1999

Table of Contents

INTRODUCTION 1

OVERVIEW OF THE SITUATION IN CANADA 2

1.0 Preparation of the Canada Report 2

1.1 Organization of the Canada Report 2
1.2 Key Terminology 2

2.0 Canadian Context 3

2.1 Canada's Environmental Management Regime: Shared Jurisdiction 3
2.2 Legislative Framework 3
2.3 Supporting Structures 5
2.4 Major Federal-Provincial-Territorial Initiative: National Implementation on Climate Change (NIS) 7

3.0 Public Participation 8

3.1 Principles 8
3.2 Policy and Guidance 8
3.3 Participants 10

4.0 Trends and Challenges 12

4.1 Higher Expectations 12
4.2 Increased Deregulation and Emphasis on Voluntary Initiatives 13
4.3 Increased Demands on Human and Financial Resources 13
4.4 Demands to Create a "Level Playing Field" 13
4.5 Greater Demands for Transparency and Access to Information 14
4.6 Increasing Role of the Voluntary Sector 14
4.7 New Consultation Methods 14
4.8 Greater Need for Coordination 15

5.0 Approaches and Tools for Engaging the Public 16

5.1 Planning 16
5.2 Purpose 16
5.3 Participant Profile 17
5.4 Resources 17
5.5 Related Initiatives 17
5.6 Appropriate Tools 17
5.7 Evaluation 17

6.0 Summary 18

OVERVIEW OF THE SITUATION IN CHILE 19

1.0 National Focus 19

2.0 Civil Society's participation in the National System of Environmental Management 21

2.1 Participation in the Environmental Impact Evaluation System 21
2.1.1 Definition and Objectives 21
2.1.2 Observations Assessment 22
2.1.3 Early Community Participation 23
2.2 Participation in the Establishment of Environmental and Emission Quality Standards 24
2.2.1 Definition and Objectives 24
2.2.2. Diffusion of the Norms and Community Participation 24
2.2.3 Consideration of the Comments 25
2.3 Participation in the Prevention and Decontamination Plans 25
2.3.1 Definition and Objectives 25
2.3.2 Preparation of the Plans and Community Participation 26
2.3.3 Publicizing the Plan 26
2.3.4 Consideration of the Observations 27

3.0 Other Participation Mechanisms 28

3.1 The Environmental Protection Fund 28
3.2 Strengthening of Partnerships 28
3.3 The Sustainable Development Council 28
3.4 Consultative Council 29
3.5 The Council and Fund of the Americas 29
3.6 Municipal Responsibilities for Environmental Management 30
3.7 "Chile I care for you" Campaign 30

4.0 Summary and Future Challenges 31

CONCLUSIONS 32

Glossary 34

Appendix A: Successes 35

Appendix B: International Influences 39

Bibliography 40

INTRODUCTION

Environmental management is the collective responsibility of individuals, communities, industry, business, organizations and institutions, governments, and countries. Increasingly, governments recognize the value and importance of participation by civil society in environmental management, and are responding to the public's desire to be included in decision-making processes on matters that affect them. Public participation is viewed as integral to having an effective environmental management regime by both the government of Chile and Canada.

The commitment by both governments to public participation is reflected in the Canada-Chile Agreement on Environmental Cooperation (CCAEC), under which common undertakings are made to foster opportunities for participation. Article 10 (6) of the Agreement directs the Council to promote and, as appropriate, develop recommendations regarding: public access to information concerning the environment that is held by public authorities of each Party, and opportunity to participate in decision-making processes related to such public access.

During the first meeting of the Council in November 1998, Canada and Chile agreed to promote civil society participation in environmental management. The 1999 Annual Program and Budget for CCAEC activities includes provision for investigation of the role of public consultation and participation in environmental management.

The purpose of this joint project is to promote transparency and public participation in environmental management. The objectives are four-fold:

- to enhance and strengthen the knowledge on participation of civil society in environmental management and to promote environmental citizenship and awareness in Canada and Chile;
- to share experiences and best practices with respect to public involvement in environmental decision making;
- to facilitate access to information on non-governmental and governmental public participation initiatives currently underway in Canada and Chile; and
- to work towards more effective civil participation in protecting the environment within the context of sustainable development.

Both countries prepared their own section for this report, and contributed to the introduction and the conclusion sections. The Chilean Commission for the Environment (CONAMA) and Environment Canada have striven to report on existing models, mechanisms, approaches and tools for public participation in environmental management; and, trends, opportunities and challenges related to public participation in their countries.

OVERVIEW OF THE SITUATION IN CANADA

1.0 Preparation of the Canada Report

This status report was prepared in consultation with the Party Secretariats, through the review of domestic and international documents on the requirements and implementation of public involvement in environmental management, and on assessments of both the government and public regarding the effectiveness of Canada's practices.

1.1 Organization of the Canada Report

This paper is divided into 7 parts. The Introduction provides a rationale and context for the report; Section 2 describes the federal environmental management regime in Canada, and Section 3, the role of the public. Section 4 outlines the trends and challenges in public participation, both domestically and internationally. Section 5 presents Environment Canada's framework for planning consultations and the use of consultation tools. Section 6 describes both successes and opportunities for involving the public more effectively. And Section 7 provides a brief summary. This report also includes a Glossary of terms and a Bibliography of reference materials.

1.2 Key Terminology

Canada's "environment management regime" is set within the context of sustainable development (i.e. the consideration of economic, social and environmental factors in decision making).

In addition, for the purposes of this paper, *the following terms will be used interchangeably to refer to participation by the public in environmental decision making: public involvement, public participation and public consultation.*

2.0 Canadian Context

In recognition of the environment as a shared responsibility between governments and Aboriginal people, the private sector, voluntary and community-based organizations, and individual Canadians, the federal government is committed to open and transparent policy and program development.

2.1 Canada's Environmental Management Regime: Shared Jurisdiction

The environment is a shared jurisdiction in Canada and, therefore, cooperation on environmental management is essential. The *Constitution Act* of 1867 does not refer to the environment; authority to act in environmental matters comes from other powers assigned to the federal, provincial and territorial levels of government. Key provincial environmental responsibilities derive from, among other things, jurisdiction over the management of provincial Crown lands, resources, property and civil rights, and local works and undertakings. Important federal environmental responsibility has been derived from a number of powers, especially those related to fisheries, interprovincial and international trade and commerce, criminal law, and peace, order and good government. Agriculture is defined as a shared federal-provincial responsibility.

Environment Canada, created in 1971, is a science-based federal department whose business is helping Canadians live and prosper in an environment that is properly protected and conserved. Its goal is to help make sustainable development a reality in Canada. Environment Canada has five regional offices which deliver programs and services for environmental conservation and protection, and atmospheric services. Within federal jurisdiction, its main focus is pollution prevention and control, nature conservation and weather services.

Every federal Minister and department shares in the responsibility to deliver on the Government's environmental stewardship and sustainable development goals. However, certain departments have responsibility for aspects of environmental protection, such as: Fisheries and Oceans, Health, Agriculture and Agri-food, Indian Affairs and Northern Development, Transport, Natural Resources and Canadian Heritage (involving national parks). Each of the provinces, which have much of the responsibility for environmental management, has a ministry of environment which addresses pollution abatement, nature conservation, and in some cases, natural resources.

2.2 Legislative Framework

Key federal environmental legislation in Canada includes the *Canadian Environmental Protection Act* (CEPA), the *Canadian Environmental Assessment Act* (CEAA). Both pieces of legislation have periodic mandatory review requirements.

Canadian Environmental Protection Act (CEPA), passed in 1988 and renewed in 1999, is the joint responsibility of Environment Canada and Health Canada. It now requires the creation of environmental quality objectives, guidelines and codes of practice, and regular reporting on the state of Canada's environment. The renewed CEPA also has important new public participation requirements including an increased role for Aboriginal peoples in environmental protection, a new Environmental Registry, the right to sue for damage to the environment, and comprehensive 'whistle-blower' protection provisions to encourage more Canadians to report CEPA violations.

Canadian Environmental Assessment Act, passed through Parliament in 1992 and brought into force in 1995, requires environmental assessment of all new projects wherever a federal authority meets certain conditions. Through CEAA, the Government of Canada is committed to facilitating public participation in environment assessments, and providing access to the information on which those environmental assessments are based. CEAA includes provisions for participant funding (financial support for people and representatives of organizations to participate in mediation and panel reviews), and also provides for a public registry for all projects undergoing a review by a mediator.

Environment Canada also administers a large number of acts, in part (e.g., the *Fisheries Act* and regulations), in whole (e.g., the *Canada Wildlife Act* and regulations) and in assistance to other departments (e.g., the *Hazardous Products Act*).

Amendments to the *Auditor General's Act* in 1995, led to two institutional changes at the Federal level. First, the position of Commissioner of the Environment and Sustainable Development (CESD) was created in the Office of the Auditor General. Second, federal departments and agencies are now required to prepare and table in Parliament a Sustainable Development Strategy (SDSs). In developing departmental Strategies, federal departments and agencies are instructed to consult with their clients, partners and stakeholders on departmental priorities for sustainable development and how to achieve them. The first SDSs were tabled in Parliament in 1997, and must be renewed every three years. The CESD is accountable to Parliament for monitoring and reporting on the processes used by departments to develop their SDSs, such as consultations, and measuring departmental performance in meeting their SDS commitments.

The *Access to Information Act and the Privacy Act (1983)* exists to provide Canadians with a right of access to information in records under the control of federal institutions. This right is in accordance with the principle that government information should be available to the public.

2.3 Supporting Structures

National

The National Round Table on the Environment and the Economy (NRTEE) is a multi-stakeholder agency independent of the federal government, committed to providing decision makers and opinion leaders with reliable information and objective views on the current state of the debate on the environment and the economy. The NRTEE was legislated by an Act of Parliament in 1994, to serve as a catalyst in identifying, explaining and promoting principles and practices of sustainable development. NRTEE's members are appointed by Order in Council, representing a broad range of regions and sectors - including business, labour, academe, environmental organizations and First Nations.

The *Canadian Environmental Assessment Agency* is charged with putting *CEAA* into practice and is dedicated solely to administering and promoting environmental assessment of policies and practices of the federal government. It reports directly to the Minister of the Environment and operates independently of any other federal department or agency. Environmental assessment provides an effective means of integrating environmental factors into planning and decision-making processes in a manner that promotes sustainable development.

The House of Commons *Standing Committee on the Environment and Sustainable Development,* composed of elected Members of Parliament, regularly conducts formal public hearings on a range of government policy and legislative issues related to the environment and sustainable development. Witnesses from a variety of sectors, groups and individuals are frequently called upon to provide their views and perspectives. The Committee has the power to report back to Parliament, and make specific recommendations to the Government. The Committee can request that the Government table a comprehensive response to a Committee report.

Federal /Provincial/Territorial

Shared responsibility for environmental management requires communication, collaboration and consultation among federal, provincial and territorial governments. Three principle structures are in place that promote inter-jurisdictional cooperation, the Canadian Council of Ministers for the Environment (CCME), the Joint Ministers of Energy and Environment (JMM), and the Wildlife Ministers' Council of Canada.

The Canadian Council of Ministers for the Environment is the major voluntary intergovernmental forum for discussion and cooperation on environmental issues of national, regional and global concern. Based on consensus decision making, the environment ministers from the provinces, territories and the federal

government meet at least twice per year to address priority environmental issues.

The *Joint Ministers of Energy and Environment* is comprised of provincial, territorial and federal energy and environment ministers who focus primarily on climate change. Both deputy ministers and senior officials support their ministers in this work.

The *Wildlife Ministers' Council of Canada* is comprised of the ministers of federal, provincial and territorial governments, in this case, those responsible for wildlife. The Council meets annually to work collaboratively to conserve Canada's wildlife and its habitat. Their work is supported by deputy ministers and the Canadian Wildlife Directors' Committee.

Non-governmental

Community and voluntary sector involvement on environmental issues is essential in Canada. The federal government recognizes the need to build partnerships with communities and to renew its relationship with voluntary organizations that serve and sustain them. The Government has plans to enter into a national accord with the voluntary sector, laying a new foundation for active partnership with voluntary organizations in the service of Canadians. It is also committed to actively engage tens of thousands of young Canadian volunteers to participate in community and national environmental projects.

Other non-governmental structures also play a key role in Canada's environmental management regime. The ENGO community is essential. Institutions (e.g. universities, foundations) are also important. For example, the International Institute for Sustainable Development promotes sustainable development in decision-making internationally and within Canada. The Public Policy Forum is a non-partisan, non-profit organization aimed at improving the quality of government in Canada through better dialogue between government, the private and third sectors. The Forum's members are drawn from business, federal and provincial government, the voluntary sector and the labour movement. Through research and discussion, they examine the way government operates and make recommendations to reform public sector management in Canada.

2.4 Major Federal-Provincial-Territorial Initiative: National Implementation on Climate Change (NIS)

Canada's commitment to climate change is co-managed by the ministers of energy and environment, and is jointly led at the federal level by Environment Canada and Natural Resources Canada. A National Secretariat manages and supports 16 multistakeholder groups, called "Issue Tables", to allow experts (representatives from government, industry, environmental non-government groups [ENGOs] and others) in sector-specific and cross-cutting subject areas to analyze emissions reduction opportunities and barriers. The Tables address federal/provincial issues which cross jurisdictional lines. Findings and recommendations will be subject to peer reviews and stakeholder consultations to ensure wider acceptance and support for implementation. The Tables' final reports are expected to provide the building blocks for Canada's response in the National Implementation Strategy on the Kyoto Protocol.

3.0 Public Participation

> *"environmental issues are best handled with the participation of all concerned citizens at the relevant level"*
>
> Principle 10 of the 1992 Rio Declaration

Public participation rests on the belief that those who are affected by decisions should have the opportunity to influence the outcomes of those decisions. This belief is strongly held by Canadians. In response, the government has established, and continues to develop ways in which to support meaningful public involvement.

3.1 Principles

The Canadian government has experienced the importance of involving Canadians in decisions that affect them. Increasingly governments and organizations (public and private) have developed principles to guide their decisions and actions related to public participation. In Environment Canada's policy, *Our Commitment to Effective Consultations* (see Appendix), principles outline the departmental approach to planning and implementing an average of 90 public involvement activities per year.

The planning and implementation of consultations are guided by:

- an open and transparent process;
- ensuring participants have the means for participation;
- selecting appropriate consultation techniques for each situation;
- establishing clear timelines, context and goals;
- defined ground rules for everyone;
- provision of appropriate resources;
- incorporation of results in decisions making; and
- ongoing communication with participants.

3.2 Policy and Guidance

Federal Guidelines affirm the democratic right of Canadians to have their views considered in government-decision-making. They also affirm the need for active involvement on the part of Ministers, senior managers, line departments and central agencies in supporting a consultative culture in the Government of Canada.

A 1998 Consultations Directive requires federal departments to identify in each Memoranda to Cabinet the key stakeholders consulted, the consultation process employed, the outcomes, and any follow-up consultations planned as part of the implementation of a policy. Other perspectives relating to particular policy

proposals (e.g. gender-based analysis, diversity, official languages) should also be included.

In addition, in 1990, the Cabinet directed departments to consider environmental concerns at the strategic level of policy, program and plan development. This directive was updated in 1999 to strengthen the role of environmental assessment, by clarifying the obligations of departments and agencies, and linking environmental assessment to the implementation of Sustainable Development Strategies.

Consultations serve to inform four primary areas of Environment Canada's work, including program delivery, regulatory/legislative development, information delivery and policy development. In addition to its general consultations policy, Environment Canada is preparing a guide for consultations with Canada's Aboriginal peoples that will be finalized through consultation.

There is also a growing body of literature and guidance to assist both government and the public in planning and participating effectively in consultations.

A Guide to Green Government
Developed by a multistakeholder committee, *A Guide to Green Government* helps the federal government departments and agencies prepare their sustainable development strategies. Signed by the Prime Minister and ministers of key federal departments, this *Guide* includes a 6-step approach to preparing a strategy that includes consultation with clients, partners and other stakeholders.

A Guide to Public Involvement
The Canadian Standards Association (CSA), a not-for-profit, independent, private sector organization, has published more than 1000 standards, approximately one-third of which have been referenced into law by provincial and federal authorities. The CSA established a multistakeholder technical committee to develop *A Guide to Public Involvement* which presents a decision-making framework for planning, implementing and evaluating a broad range of public consultation activities. The committee operated under consensus decision-making rules and the report was subject to a board peer review prior to publication in 1995.

Building Consensus for a Sustainable Future: Guiding Principles
The Canadian Round Tables of Canada developed *Building Consensus for a Sustainable Future: Guiding Principles*, to communicate their approach to involving the public in sustainable development and in consensus decision making.

North American Commission for Environmental Cooperation

The Joint Public Advisory Committee of the North American Commission for Environment Cooperation has proposed a *Draft Framework for Public Participation* that includes principles as well as practices to guide public consultation with the Parties. The Framework is intended to maximize public involvement to ensure open and effective dialogue and engagement among all elements of the public, and to establish a trinational network of diverse stakeholders that are interested in the CEC's mission. The draft has been widely distributed for public comment and review and was presented to the Ministers' Council for adoption.

International Initiatives

Canada is a signatory to many international agreements that support and promote public involvement in environmental decision making.

(See Appendix B for further details regarding international initiatives on public participation.)

3.3 Participants

Key participants in environmental decision making exist within and outside government, domestically, regionally and internationally. Consultations can be bilateral (for example, between the federal government and a province, between a federal department and an industry representative, or between Canada and another country), multilateral (for example, among the NAFTA Parties), and multistakeholder (the NIS on Climate Change).

Within government, domestic consultations can occur at different stages and may involve a directorate within a single department, other government departments, or other jurisdictions.

Outside government, participants often include:

- the Canadian Environmental Network (CEN), a coordinating body for many environmental non-government organizations supported by Environment Canada;
- ENGOs not represented by the CEN;
- industry/business (both representatives of specific sectors and members of individual companies);
- Aboriginals;
- the voluntary sector;
- youth (e.g. Youth Round Table on the Environment)
- communities (e.g. Sustainable Communities, Millennium Eco-Communities Initiatives)
- academics; and
- institutions.

The media also plays a role engaging Canadians and communicating the public's views to Government and vice-versa.

Internationally, Canada's participation continues to grow as it contributes to the consultations that shape issues from a global perspective.

4.0 Trends and Challenges

> *"Citizens want a direct, substantive and influential role in shaping policies and decisions that affect them. They want to be heard. And they want a commitment that leaders will take citizens' views into account when making decisions."*
>
> Jocelyne Bourgon
> then Clerk of the Privy Council Office, 1998

The complex environmental issues we currently face require that decision makers be well informed of the range of concerns and interests surrounding the issues. Decision makers also need to understand the degree of public concern as well as the potential consequences of different decisions.

As involving the public has become standard practice for the Canadian government, a number of trends have emerged which further challenge how the public participates in environmental management decisions.

4.1 Higher Expectations

Increasingly, civil society expects to be involved in and to influence public policy. Increasingly, governments are responding with more opportunities for the public to become involved in defining the issues and their solutions. And, increasingly, the lines between domestic and international policy are blurring; complex horizontal issues related to sustainable development demand the involvement of local, national, regional and international interests.

Citizens expect government to be accountable for its decisions and actions. They also expect government to distinguish between informing the public and consulting the public on these decisions. More and more, citizens' expectations for meaningful involvement are explicit. They want "assured listening" from the government, the knowledge that their views will be seriously considered. And they want to know what decisions the government ultimately makes, and the rationale behind whether their views were incorporated or not. In turn, government expects participants to make valuable contributions to the overall exchange of information and decision-making process. This can place heavy demands on representatives who are frequently consulted.

In his recent report on Canada's environmental and sustainable development practices, the Commissioner for the Environment and Sustainable Development identified three significant weaknesses in consultation: participants in consultations were given limited feedback on what the government had heard and how their views had been reflected in the sustainable development strategies; there was limited co-ordination among departments which have complementary responsibilities; and there was limited involvement of senior

managers. In response to the Commissioner's recommendation for central guidance, the Privy Council Office has undertaken to establish consultation guidelines for the federal government. In parallel, the Treasury Board Secretariat, in its capacity to provide leadership through developing accountability frameworks and promoting best practices, will be preparing evaluation criteria for consultations in the year 2000.

Expectations regarding acceptable practices are also increasing with the number of guidebooks and policies being developed. In Canada and internationally (see Appendix B), numerous organizations are explicitly developing guidelines, policies and principles to shape public participation in environmental management regimes. Within the North American Agreement on Environmental Cooperation, for example, Environment Canada has played a key role in revising the Guidelines for Submission on Enforcement Matters Under Articles 14 and 15 of the NAAEC to improve transparency and fairness of the public submission process.

4.2 Increased Deregulation and Emphasis on Voluntary Initiatives

There is a climate of deregulation in Canada; where practical, the government prefers to gain the cooperation and commitment of the public without imposing formal legislative and regulatory requirements. This approach has implications for how consultations are designed, the lengths of time participants need to reach agreement and ultimately, their commitment to take action.

4.3 Increased Demands on Human and Financial Resources

A report on Environment Canada's multistakeholder consultations in the mid-1990's indicated that participants were experiencing "consultation fatigue" as result of the numerous consultation opportunities. A more recent survey adds weight to this, indicating that although a large percentage of the general public believes there should be increased emphasis on consultation, over three-quarters suggested that they neither have the time nor the knowledge to offer useful advice on complex issues.

In addition to the challenges inherent in engaging willing and able participants in consultations, once engaged, there is the challenge of reconciling diverse interests (environmental, economic, social-cultural and cross-cutting). And there is the ongoing requirement to allocate sufficient resources (technical and consultation expertise, time and finances) to ensure that the issues are adequately addressed. It is a challenge for both the public and government to set priorities and allocate resources for the most critical issues.

4.4 Demands to Create a "Level Playing Field"

Associated with the need for adequate resources is the challenge of supporting a "level playing field" among participants whereby they have equitable opportunities to receive, understand and provide information to the consultation process. To promote equitable opportunities in the consultation process, government must find effective and economic ways in which to address differences among participants in areas such as technical expertise, language, geography and access to information.

4.5 Greater Demands for Transparency and Access to Information

The purpose of the *Access to Information Act* is to provide a right of access to information in records under the control of a government institution. This is in accordance with the principles that government information should be available to the public and that exception to this right should be limited. This *Act* applies to all issues, including the environment.

Specific to pollution prevention, there is a growing trend internationally by industry and government towards greater public disclosure of chemical releases and transfers. In Canada, the National Pollution Release Inventory (1992) is the only publicly accessible database of on-site releases to the environment of 249 substances of concern from facilities nationwide. Public disclosure of this information enables citizens and communities to take action regarding their concerns of risk to their health or environment.

4.6 Increasing Role of the Voluntary Sector

The current government's commitment described in Redbook II, *Securing Our Future Together*, included commitments to enhance the capacity of the voluntary sector. It is acting on this commitment and will be entering into a national accord with the voluntary sector, laying out a new foundation for an active partnership in the service of Canadians. It has also committed to actively engage young Canadian volunteers to participate in community and national environmental projects. Environment Canada has a history of cooperation with the voluntary sector through programs such as Weather Watchers, EcoAction 2000, and through wildlife programs which engage volunteers. In 2001, the voluntary sector will become a national focus, as an expression of Canada's interest in the International Year of the Volunteer.

4.7 New Consultation Methods

Domestically and internationally, the emerging role of "citizen engagement" is augmenting more commonly practiced strategies, such as the multistakeholder process. The Organization for Economic Cooperation and Development (OECD) has recently undertaken a two-year study of citizen engagement in which Canada will participate. The addition of technology to consultation has also changed the way government and civil society exchange views. The Internet

and the World Wide Web are frequently used to exchange information and gather feedback from a broad range of interested parties. Videoconferencing plays a small role in bringing together participants from a wide geographic area for brief meetings. These new tools may provide additional opportunities to engage the public on the environment, and support more traditional consultation methods.

4.8 Greater Need for Coordination

With the hundreds of consultations undertaken annually across Canada, there is a need to coordinate the participation and input of interested parties (both government and the public). The Commissioner for the Environment and Sustainable Development highlighted this in his most recent report and will be setting expectations for improvement in this area. The Department of Indian Affairs and Northern Development, with a distinct mandate in the North, is developing a Northern Sustainable Development Strategy to reflect the coordination and participation of relevant departments and to streamline the involvement of northerners in the consultation process.

5.0 Approaches and Tools for Engaging the Public

Environment Canada has supported and endorsed *A Guide to Public Involvement* to promote effective consultations. This decision-making framework describes a step-wise approach to conducting a broad range of public involvement initiatives, all of which share the considerations outlined below.

5.1 Planning

Effective planning, implementation and evaluation of public participation in Canada's environmental management regime are contingent on several key factors being addressed within the context of guiding principles. They include a clear purpose, preferred levels of agreement among participants, profile of participants, resources, implications of other initiatives, appropriate consultation tools and an evaluation of the process and outcomes of the consultation. The complexity of issues also has implications for how these plans unfold. In each consultation, the balance among these factors differs, and it is fair to say, there has yet to be the "perfect" public consultation.

5.2 Purpose

The purpose for engaging the public and the level of desired agreement among participants are key to the overall consultation design. The purpose can range from a simple sharing of information to a complex partnership in which the government and interested publics jointly determine the issues and how to address them. They are generally characterized as:

- one-way communication; information only
- an exchange of views; no effort to reach agreement
- a sharing of values in an effort to understand interests, if not find common ground
- majority rule
- partial agreement with areas of diversity
- consensus
- shared decision making leading to joint implementation/monitoring of agreements
- through community-driven initiatives, going beyond the decision-making authority of single organizations and/or level of government to guide voluntary actions.

Although government always reserves the right to make the final decisions, it is often advantageous to implement decisions that the key stakeholders determine is both desirable and practical to implement. As a science-based department, however, Environment Canada must anchor its decisions in sound scientific research while taking into account the public's views.

5.3 Participant Profile

It is important to know who is likely to participate in a consultation. The description of potentially interested parties and individuals helps government assess the range and level of concerns, as well as the capacity of participants to engage in consultation. For example, information, such as the participants' current levels of interest and awareness, helps planners estimate the time required to share information and establish a common understanding of the issues.

5.4 Resources

Given the information above, it is necessary to consider what constitutes adequate resources to involve people in ways that support the overall purpose. In estimating resources, however, the costs of not consulting are also addressed. The public can delay or overturn decisions when concern is high and no opportunity for consultation is offered.

5.5 Related Initiatives

At any given time, there are many consultations underway at the federal, provincial and municipal levels. There can also be related international initiatives. Whether it is pending federal legislation or an international agreement with implications for domestic action, effective planning must take them into consideration.

5.6 Appropriate Tools

In addition to the planning tools described above, there are numerous "tools" for involving the public, from town hall meetings to electronic discussion groups. Matching the appropriate tool, or mix of tools, to the overall consultation is essential.

5.7 Evaluation

Both cumulative and summative evaluations allow the opportunity to learn and make adjustments to subsequent consultations. Consultation plans are frequently altered based on the need to give people more time to respond, or because new information changes the scope of the discussions.

6.0 Summary

In Canada, the role of the public participation in environmental management is substantial and growing. Many citizens are explicitly articulating their expectations for meaningful and timely involvement in issues that affect them. The issues, themselves, are rarely discrete and require coordination among many interests and jurisdictions, often beyond domestic borders. And strategies for involving the public are under review for their effectiveness and efficiency.

Public involvement is, however, resource intensive. It takes an investment in building the capacity of government and the public to maximize the benefits of the consultation process. Although the costs can be substantial, the costs of not involving the public in issues of interest and concern can be costly in terms of delays, a lack of public support for implementing the decisions or a loss of public confidence in government. Through feedback, Environment Canada is aware of the need for continually improving its capacity to engage the public and to the changing role it plays in promoting and participating in decision making.

Within Canada's democratic tradition, public participation continues to evolve. It is likely there will be a growing demand for using only the best "mix of tools" when involving the public in environmental management decisions and for demonstrating the value that the public brings to these decisions. Ultimately, the best indicator of successful public involvement will be the satisfaction that Canadians have with the state of the environment.

OVERVIEW OF THE SITUATION IN CHILE

1.0 National Focus

Civil society's participation in environmental management in Chile derives from the right that is present in the basic principles of the environmental management regime. As an example, it is appropriate to emphasize that the Presidential Message on the Law Nº19,300 regarding the Foundations of the Environment (LBMA)[1], recognition and importance is given to the participation of the civil society:

> "When concern is expressed about the environment, about the degradation of our natural resources, the effects of pollution, the quality of the urban habitat for our population, basically, concern is being expressed for the life of all those that share our present and of those that will follow us".

On the basis of these principles, we have promoted in our country the design of an environmental institutionalization that includes specific and effective mechanisms to gather the concerns and contributions of the citizens in environmental management. Within the spirit of such initiatives is the right of the citizens to intervene in the actions that affect them. Consequently, the legal opportunity is protected for the concerns of the community in environmental matters.

The main milestones in the environmental regime are composed by the above mentioned LBMA, which gives substance to the National System of Environmental Management (SNGA) and to the institution that from it arises, the National Commission for the Environment (CONAMA). Following the approval of said law in 1994, CONAMA was launched, the Regime for the Environmental Impact Evaluation System was formulated, the Regime for the Articulation of Environmental and Emission Quality Standards, and the Norms for the establishment of Prevention and Decontamination Plans. All these legal bodies set out opportunities for the participation and involvement of the citizens.

On January 9, 1998, the Directive Council of CONAMA approved the document "An Environmental Policy for Sustainable Development"[2]. Said document sets out the policy of the Government of Chile in environmental matters. Said Policy sets out the conceptual and strategic basis to make the development process environmentally sustainable and is consistent with other program priorities such as the modernization and decentralization of the democratic institutionalization, the modernization of the production, the alleviation of poverty, the expansion of access to opportunities for everyone and the improvement of the quality of life.

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[1] (Basic Law on the Environment) Published in the Official Gazette on March 9, 1994.
[2] An Environmental Policy for Sustainable Development, CONAMA, January 1998.

The environmental policy's central objective is to achieve a national commitment, public and private, institutional and civic that will allow to successfully meet our responsibility towards the environment. It was founded on stable and permanent principles; it establishes medium- and long-term objectives and emphasizes the courses of action that must guide environmental management in the country during the following years. The Environmental Policy for Sustainable Development recognizes that legitimate, transparent and socially acceptable environmental management is only possible through the confluence of the different actors that make up the civil society. Such participation will allow for the recognition of the rightful differences among the parties and will seek consensus and agreements among them.

In accordance to this focus, citizens' participation must recognize and include the following factors:

- Recognize that the environmental policy will be *viable* only to the extent that the population and the representative organizations recognize and validate it's content and are capable of acting accordingly.

- The building of a "consensus" over the national strategy for sustainable development has a *sense of process* within which there must be a balance and compatibility between the different options in the social, economic and, of course, environmental spheres, which at the outset appear to be divergent but in an evolutionary an dynamic way must move towards integration.

- Agree that the environmental theme as national concern is not limited to a "technical" problem, but when related to its causes and solutions are the changes that must be promoted in behaviour and cultural vision of all members of society.

2.0 Civil Society's participation in the National System of Environmental Management

The LBMA includes, for the first time, in the Chilean public management, broad formal opportunities for society's participation. The challenge confronted in the recent past years has been that of making these opportunities operational and to manage them adequately promoting activities that will allow the community to exercise that right.

There are specific areas for community participation and action in the environmental management tools, which include rights and duties. Each one of these tools of prevention and of environmental restoration as conceived by the LMBA establishes opportunities for such participation. Also, an instrument of community action has been established, the Environmental Protection Fund, which will provide resources for the development of citizens' initiatives of environmental restoration and protection. Finally, the Law designates environmental education and research as the first of its management instruments, these can also be interpreted as civil society's participation.

The principal formal opportunities of civil society's participation in environmental management, both in prevention and restoration of environmental damage will be elaborated below in greater detail:

- Environmental Impact Evaluation System
- Environmental and Emission Quality Standards
- Prevention and Decontamination Plans
- Other participation mechanisms

2.1 Participation in the Environmental Impact Evaluation System

2.1.1 Definition and Objectives

The LMBA considers, for the Environmental Impact Evaluation System (SEIA) a citizens' participation mechanism that will seek to inform the population about the accomplishments and impacts of investment projects and to collect their observations in order to consider their incorporation into the environmental rating. This mechanism is of special importance because society is ever more aware of the environmental problems and concerned about the quality of life that is directly affected (positively and/or negatively) by the great number of investment projects. Consequently, their concerns, complaints and demands to participate in matters that affect them are ever increasing.

The process for civil society's participation as set out in the LMBA for the SEIA (Art. 27) constitutes a basic platform or general framework that requires the publication of a signed summary of the Environmental Impact Study in the Official Gazette or in a national or regional newspaper, giving the opportunity for

improvements to be included as established by Art. 26. Said Article states that "It will be in the responsibility of the Regional Commissions and of the National Environmental Commission, as the case may be, to establish the mechanisms that will ensure the informed participation of the organized community in the process of rating the Environmental Impact Studies submitted to them".

Within this context and taking into account the several experiences developed since the promulgation of the Basic Law, CONAMA began, in September 1997, to implement citizens' participation programs in a systematic manner for different investment projects submitted to the SEIA, be they regional or interregional. With the implementation of these programs a participatory methodology was applied that includes social participation techniques (group meetings, public fora, etc.). The axis of such programs is to ensure the delivery of the information about the investment projects within the context of the SEIA, gather the comments of the population and classify it within the 60 days as set out in the Basic Environmental Law.

The specific objectives of these programs are:

- To make information available regarding the Environmental Impact Studies submitted in order that the community may know and understand the positive and negative impacts of the project.
- To ensure that a diversity of opinions will be expressed in the events of public participation organized for the discussion of the project.
- To guide the different opinions within the public participation process within the context of the SEIA.
- Create participation opportunities for persons, groups and/or communities with limited access to pertinent information regarding the projects.
- To design and implement a methodology that will make possible the submission of comments by the community to the Environmental Impact Study of the project.

2.1.2 Observations Assessment

CONAMA or COREMA, as applicable, includes the observations of the community and of the technical committee, and, if the Environmental Impact Study does not satisfactorily resolve the doubts that may have arisen, requests clarifications or modifications to the project proponent. The latter will reply through an addendum that will become an integral part of the Study.
Once CONAMA or COREMA has completed the evaluation process, it must issue an Environmental Rating Resolution of the Environmental Impact Study, which establishes whether it has been approved, rejected or approved with conditions. If a project is approved with conditions, the proponent must include each and every one of the conditions of the Resolution to his project. Failing to do that, it will be assumed that the project does not meet the Environmental Rating Resolution. Once the Resolution is issued CONAMA or COREMA must

send to each and every person or organization that have participated in making observations to the Study, a letter making it's decision known. It can also make its decision known by publishing it in a newspaper.

The Environmental Rating Resolution must be fulfilled by the proponent and is verifiable by the public services. The community also can alert regional or national CONAMA regarding any failures to comply with any of the conditions of the Resolution.

2.1.3 Early Community Participation

This refers to an informal means of participation that assumes early involvement of the community in the environmental evaluation of the investment processes. The experience gathered by SEIA shows that the participatory processes triggered once the project has been designed and becomes part of the SEIA process awaiting for environmental approval generates, on many occasions, concerns and uncertainty on the affected population. This, to a great extent, because they do not feel included, that their closest interests are endangered and have fear of the potentially negative environmental and social impact.

In order to minimize such uncertainty and to channel adequately past environmental demands it is important to create opportunities for early participation before the Studies are introduced into the System. The assumption is that early involvement by the public minimizes the conflict between the proponent and the community, and:

- Allows for the modification of possible conflicting aspects of the project before these are fully resolved in the Environmental Impact Study.
- Promotes the establishment of a relationship of cooperation and understanding between the proponent and the community.
- Allows for the identification and discussion of non-environmental issues of interest to the community and the company, and thus may not be brought up in the formal public participation.

2.2 Participation in the Establishment of Environmental and Emission Quality Standards

2.2.1 Definition and Objectives

The standards of environmental quality set the desired environmental norm. These must guide the design of environmental public policies and all productive activities set up in the country. They set the baseline of environmental quality that we aspire to, therefore participation in this activity is essential.

There are two types of environmental quality: primary, when they protect human health, and secondary when they protect the rest of the components of the environment. The primary norms are applicable throughout the territory of Chile, no so the secondary ones, these can be set in a more restricted territorial area.

The emission standards must be set with territorial specificity. That is to say, they will only be valid over the area set out by the decree and will correspond to the environmental characteristics of the area they apply to. The different environmental capacity to receive emissions, effluents and residues without degradation of its quality must be taken into account.

The changes brought about by the LGBMA regarding legislation and procedures of formulation of the norms previously in force can be summarized as follows:

- They must be promulgated by Supreme Decree.
- The proposed norms must be formulated in its technical aspects taking into account social, economic and political considerations.
- The mandatory process for the approval of the norm includes public sector, private sector, scientific and community consultation and the observations that are submitted by these sectors must be given due consideration.

2.2.2. Diffusion of the Norms and Community Participation

The Priority Plan of Norm Setting must be approved by the Directive Council of CONAMA, published in the Official Gazette and in a newspaper of national circulation. It shall fix the areas to be regulated for a period of two years and is determined, following consultations, in March of every year. Once the Priority Plan of Norm Setting is established an analysis of each case is conducted and, through a Decree of the Executive Directorate, it comes into force after the 150 days that the preparation of the Draft Project of each of the norms takes. The constitution of a file containing the resolutions to be adopted, the consultations and observations made and all the information related to the formulation of the norm must also be made known.

During this period, a deadline is set for the reception of technical, scientific and social background information on the norm to be adopted. Any natural or legal person may formulate these observations and scope.

The background information must be properly justified and delivered in writing to the national or regional CONAMA, as appropriate.

Once the norm Draft Project is prepared, CONAMA submits it for consultation. A summary of the Norm is published in the Official Gazette and in a newspaper of national circulation on the Sunday following its publication on the Official Gazette. Also, a copy of the file is transmitted to the CONAMA's Consultative Council (or to COREMA's, as appropriate) for the release of it's opinion.

During the sixty days following the publication of the Draft Project any person or organization may submit its comments on the Draft Project of the Norm. Said comments must be reasonable and must be accompanied by technical, scientific, economic, judicial or social background information supporting them.

2.2.3 Consideration of the Comments

After the sixty days, and taking into account the background information contained in the file, the observations submitted and the results of the studies a final Norms Project is defined and is submitted to CONAMA's Directive Council for its approval and subsequent submission to the President of the Republic for final approval.

The elaboration of the Norm is done in two stages of public discussion and consultation: during the preparation of the Draft Project and in the discussion stage of the Norm Project, it is submitted to the CONAMA's Directive Council. At both stages, the observations made must be considered and incorporated into the file of Norm preparation.

The Norm must take into account, among other technical aspects, the organizations with supervisory powers over the subject of the Norm.

2.3 Participation in the Prevention and Decontamination Plans

2.3.1 Definition and Objectives

The country has environmental assets the must be recovered. Following the promulgation of the LGBMA several environmental legislative tools were created that are aimed at the environmental recovery of areas that have been declared as saturated with contamination, or of latent contamination, where the contamination levels have not yet surpassed the norm but are at worrying levels.

These tools are aimed at confronting the problems of contamination. In areas declared as latent, contamination prevention plans must be implemented whose objective is to prevent that the established limits of environmental quality are not exceeded. In areas declared as saturated, where the limits have been exceeded, the mechanism must be the implementation of a plan to decontaminate, aimed at reaching the established standards of the Norm of environmental quality. If only one of the indices is surpasses the Norm, the decontamination plan must be implemented.

The declaration as "latent" or "saturated" must be backed up by the measurements carried out or must be certified by qualified public institutions.

2.3.2 Preparation of the Plans and Community Participation

After an area has been declared as latent or saturated and the resolution is published in the Official Gazette and in a national circulation newspaper, starts the 120 day period of collection of technical, scientific, social and economic background data regarding the latent or saturated area. Any natural or legal person can submit observations or data.

The information must be duly backed up and submitted in writing to a regional or national CONAMA, as appropriate.

At the same time, a determination is made of what scientific studies will be conducted and on the preliminary background for the formulation of the plan. These must contain information about the following:

- Location and types of sources of contamination
- Magnitude and characteristics of the emissions
- Estimate of the negative impact of the emission on the health of the population
- The characteristics of the area where the contaminants are being emitted
- The means that may be used to decontaminate the area
- An estimate of the social and economic impact of the use of such means

2.3.3 Publicizing the Plan

Once the draft project of the plan is prepared, CONAMA submits it for consultation. Its summary is published in the Official Gazette and on the Sunday following, in a newspaper of national circulation.

Also, a copy of the file is forwarded to CONAMA's (or COREMA's) Consultative Council, as appropriate, for them to issue an opinion.

During the sixty days following the publication of the draft project, any person or organization may submit observations regarding the contents of the draft project of the plan. These observations must be reasonable and must be supported by technical or social background data.

2.3.4 Consideration of the Observations

Within the sixty days, the observations to the draft project are evaluated and a final project of prevention or decontamination plan is prepared, which is then submitted to CONAMA's Consultative Council for its approval and is then forwarded to the President of the Republic for final approval.

Similarly as for the elaboration of the norms of environmental quality, a two-stage discussion and public consultation is envisaged for the preparation of decontamination or prevention plans: during the preparation of the draft project and during the discussion stage of the final project it is submitted to CONAMA's Consultative Council. At both stages the observations made must be given due consideration and incorporated into the file of the development of the plan.

3.0 Other Participation Mechanisms

3.1 The Environmental Protection Fund

An organized community has access to different mechanisms to finance environmental management projects that are considered of priority. One of them is the Environmental Protection Fund (FPA), a rotating fund created with the promulgation of the LBMA. This fund is administered by CONAMA. The objective of this fund is to "To partial or totally finance projects or activities aimed at the protection or recovery of the environment, the preservation of nature or the conservation of environmental assets".

The fund will aim towards the execution of local community initiatives of environmental improvement, training and information geared to strengthening the capabilities for action of the communities. The maximum contribution for each project is $15,000,000. The communities may request technical support for the design of projects from any organization deemed trustworthy.

The first invitation to this rotating fund was made in 1997. On that occasion 81 local recovery, conservation and environmental education projects were financed.

Every year CONAMA invites by public tender for the award of the funds set-aside in the National Budget. The tender is called trough the news media.

3.2 Strengthening of Partnerships

The Environmental Policy of the Chilean Government envisages among its specific objectives "the participation of the civil society in environmental management, increasing the opportunities for public participation ... by generating programs conducive to the modification of behaviour and conduct so that the citizen will have shared responsibility in the management of the environment".

The main activities in this area include the development of programs of community information and sensitization, the strengthening of the main participants in environmental management (municipalities, NGOs, social organizations, youth, etc.) through the implementation of workshops and training sessions; management and administration of the Environmental Protection Fund, with which financial support is provided to specific activities, and finally, studies and research is carried out that will permit a better understanding of the opinions and perceptions of the actors involved in this subject.

3.3 The Sustainable Development Council

The Sustainable Development Council was constituted in fulfillment of the agreements of AGENDA 21.

Its objective is to advise the President of the Republic through studies and to propose actions to promote and protect Sustainable Development. To discharge its responsibilities the Council must: i) keep itself informed annually regarding the status of sustainable development within the country; ii) submit to the President of the Republic an agreed view of sustainable development in the medium- and long-term; iii) submit to the President of the Republic, in a document of public knowledge, its suggestions and proposals on this subject.

It is composed of 92 members and its characteristic is the wide representation of the players in Chilean society through the main leaders of the public and private sectors and the population at large.

3.4 Consultative Council

The Consultative Council of the National Commission for the Environment and the Regional Consultative Councils are advisory bodies to the CONAMA's and COREMA's Consultative Councils, respectively. They are bodies created under the Basic Law of the Environment and through which the authorities gather the various social sectors to reach better decisions in environmental matters.

It is composed by representatives from Universities and Academic Centers, Non-Governmental Organizations, the labour force, entrepreneurs and a representative of the regional Superintendent or of the President of the Republic, as may be required.

3.5 The Council and Fund of the Americas

The Council of the Americas is a body that provides financial support to community environmental projects. It is a bilateral body (Chile-USA) and it is composed of public and private sector representatives.

It is made up of eleven members with a majority participation of the civil society, represented by six advisors together with four representatives of the Government of Chile and one from the United States.

This Fund finances activities of national Non-Governmental Organizations aimed at:

- Enhancement of community management at the local level.
- Education and training for persons and organizations of the civil society.
- Conservation and sustainable management of natural resources for small-scale productive development.

3.6 Municipal Responsibilities for Environmental Management

It is possible to identify two types of responsibilities of the Municipalities in environmental management.

- Those that relate to the municipalities own activities, among which are the enforcement of transport regulations and public transit, over construction and urbanization, urban planning, cleaning and landscaping and the Community Development Plan.
- Those activities shared with other bodies of Public Administration that in environmental matters relate to: the Environmental Impact Evaluation System, Environmental Control and Responsibility.

Within the context of the SEIA, municipalities are bound to inform the community on the environmental impact of investment projects that are submitted for environmental assessment.

Within the field of control, they must require the courts to apply sanctions for non-compliance with the norms of pollution control plans. Municipalities also receive complaints formulated by citizens related to the infringement of environmental norms, and reports them to the appropriate control agency. Finally, any person may request the municipality to start an "action for environmental damages", with the purpose of obtaining remedy for the damage caused to the environment, at the expense of the party responsible for the damage.

3.7 "Chile I care for you" Campaign

CONAMA has developed a campaign of civil participation under the name "Chile I care you", which is also an environmental education tool through concrete actions in favor of the environment.

The campaign and its different programs will develop close to 7000 activities during October 1998 and March 2000, and will cover the main cities in all regions of the country.

4.0 Summary and Future Challenges

During the past few years the country has taken important strides towards environmental protection and sustainable development. The establishment and consolidation of new opportunities and mechanisms for the participation of civil society in environmental management is one of our foremost achievements during this decade.

No one argues today, with the importance of having communities that are involved and interested, and that their effective participation helps minimize the conflict between the community and a project or an environmental problem. Some of the achievements in the creation of channels for the participation of civil society are:

- The meeting and involvement of the players involved in an environmental problem resulting in the establishment of a relationship of cooperation and understanding has been facilitated.
- Local solutions have been found for local problems.
- The community has identified and dealt with a large number of environmental problems or concerns.
- A contribution has been made towards the improvement of the quality of life in several communities where environmental problems were detected.
- Potential sources of conflict in several projects and activities were modified before they became real.
- Practices and methodologies were designed regarding civil society's participation and at present resulting in a store of learned assets and experience in the private and public sectors and in the citizens' organizations.

Finally, it should be noted that all these processes of civil society's involvement with environmental issues are very recent. That means that there are still difficulties to be surmounted as the country acquires more experience in the management of environmental issues and in the promotion of opportunities for public control and action. It is obvious that we must go further in such areas as dissemination of tools for environmental management and for civil society's participation. Despite some shortcomings, it is possible to see public interest in, and appreciation of their participation as well as good will by all Parties to explore further these spaces.

CONCLUSIONS

The presence of mechanisms, such as legislation, tools, initiatives, and advisory bodies, which provide opportunities for civil society participation in environmental management, in both Chile and Canada, is an expression of the government and the public will to strengthen civil society participation in the actions that affect them. Environmental management regimes in Canada and Chile both provide opportunities to integrate diverse views from a broad range of interested individuals and groups in society. In Canada, the perspectives of individuals, communities, Environmental Non-Governmental Organizations, academe, industry, business, and Aboriginal Peoples are regularly solicited by Government to inform environmental policy and decision-making processes. In Chile, the views of civil society are represented by academics, the productive sector, the workers, communities, and non-governmental organizations.

In their environmental management regimes, both Canada and Chile share certain fundamental principles like transparency in decision making processes; guaranteed access to information; and the promotion of two-way communications.

In a number of areas, both countries have implemented similar mechanisms to foster civil society participation in environmental management. For example, through legislation, both countries invite the public to participate in the environmental impact assessment or evaluation of projects, and to comment on regulations and environmental standards.

In addition, Canada and Chile have established structures to promote civic participation in sustainable development. In Chile, the Sustainable Development Council, composed of a range of civil society, undertakes studies to advise the President on actions to promote and protect sustainable development. Similarly, in Canada, the National Round Table on the Environment and the Economy, with multi-stakeholder representation, provides advise to decision makers and opinion leaders on the current state of the debate on the environment and the economy, and on sustainable development. The Office of the Commissioner for the Environment and Sustainable Development also plays an oversight role to ensure accountability to the public for commitments in federal department Sustainable Development Strategies.

The two countries recognize the value of partnerships in reaching environmental decisions and goals, and work with various social sectors. In Chile, National and Regional Consultative Councils, including academics, entrepreneurs, NGOs, and the labour force, provide a venue to address environmental matters of great relevance, and to develop recommendations. In Canada, the government has established many effective partnerships with various sectors to address environmental issues - such as the creation of sixteen multistakeholder Issue

Tables to identify best practices, opportunities and challenges to meet Canada's Kyoto commitments.

There is a growing appreciation by both governments for knowledge at the local level and an interest in empowering citizens to become actors in community environmental actions. This is evident by the creation of a range of initiatives and consultative bodies to build citizen capacity and encourage citizen participation in environmental decision making by the Chilean and Canadian Governments. In Canada, the *Sustainable Communities / Community-Driven Participation and Millennium Eco-Communities Initiatives, and the Community Animation Program* encourage a wide range of involvement in environmental activities, and serve to build capacity and raise awareness on the environment. Chile's civil society participation initiatives targeted at community action include the *Environmental Protection Fund, and the "Chile I Care for You"* campaign which promote civic participation in environmental activities and education.

In the future, the community at large will likely play a stronger and more integral part in environmental decision-making. There is evidence from both governments of the will to strengthen the local environmental action capabilities and to adopt mechanisms for independent action.

Environmental management and protection is the collective responsibility of governments, communities, individuals, and all groups and sectors of society. The growing interest of civil society to participate in, and to influence environmental decision making, is a signal of the public's desire to play a role in conserving and preserving the environment. It is now incumbent upon government to enhance opportunities for public participation in environmental management, to raise citizen awareness of complex environmental issues and to build the public's capacity to act.

Glossary

citizen engagement:	a two-way learning process between citizens and their democratically elected and public sector institutions in a search for common ground
civil society:	segments of society organized in various ways and sectors, including but not limited to individuals, non-government organizations and other groups representing the interests of women, children and youth, indigenous people, local authorities, workers, farmers, business and commerce, and the scientific and technological community
consensus:	a level of agreement in which all those who have a stake in an issue agree on actions and outcomes to resolve or advance issues
issue table:	multistakeholder group with a specific interest and/or expertise in an issue
multistakeholder:	involving many interests, views, values or "stakes" in an issue or outcome
consultation:	an interactive process that elicits and considers the values, information and advice of interested parties and individuals
voluntary sector:	a sector of society including personal good deeds, organized unincorporated activity, mutual-help organizations, non-profit corporations without charitable status, charitable organizations, including charities, public and private foundations, universities, colleges, hospitals and museums.

Appendix A: Successes

The following examples describe some of Environment Canada's consultation initiatives that highlight different tools and approaches to informing environmental management decisions.

Niagara Process (Multistakeholder)
In 1984, Environment Canada asked the Niagara Institute, a leadership development organization, to organize a workshop involving various sectors of society with the goals of developing strategies to protect the environment while maintaining jobs and securing the interests of all parties. The result was the multistakeholder process, a consultation strategy used frequently by government in addressing sustainable development issues. As originally designed, it involved key representatives of the interests and expertise surrounding an issue (e.g. government, non-government groups, Aboriginals, academics/institutions, businesses or industry). The participants were required to reach consensus to increase the likelihood that their decisions would be supported and implemented. The National Round Table on the Environment and Economy continues to use this tool and approach in its work.

Sustainable Communities (Community-Driven Participation)
A vast array of community initiatives is underway across Canada. They range from major remedial action plans, to weather watches, smog forecasts, monitoring of wildlife and plant species, and habitat conservation. They also represent a range of partnerships with Environment Canada as well as other federal departments and the private sector. Federal, provincial and territorial governments and agencies, non-government organizations, Aboriginals, volunteers, industry as well as their associations and business come together to reach decisions which are a better reflection of their shared interests and which they support.

Hamilton Harbour
The Hamilton Harbour is an Area of Concern affected by heavy industry, unprocessed sewage and indiscriminate dumping. It took 6 years for the various stakeholders to agree on a plan, followed by a series of intense seminars and meetings, and finally, the adoption of an approach that included environmental, economic and social concerns. The long-term commitment of the community organization has made it a powerful force in solving problems of environmental degradation. Another Area of Concern, Collingwood Harbour, has been completely restored.

Community Animation Program
The Community Animation Program (CAP) was initiated in 1994 as a pilot project in several regions and then expanded nationally to all regions. A joint Health Canada and Environment Canada program, CAP is managed by regional offices and operates in collaboration with non-government and provincial partners under

varying regional arrangements. Through this program, communities have built their capacity to take action on issues involving both health and environment by implementing regional strategies with interested partners. In Alberta, there is a focus on air quality; in the Yukon, the focus is on bioregional mapping; and in the Atlantic Region, the focus is on the impact of the environment and employment opportunities on human health.

Millennium Eco-Communities
The Millennium Eco-Communities (MEC) initiative encourages communities to consider how they can create a natural legacy into the new millennium. Through a website, it offers interested communities an integrated information resource and opportunities to share information, network and exchange ideas with scientists and other specialists about nature, clean air, clean water or climate change. Unlike many public participation projects that intend to build understanding and agreement towards action, this initiative aims to provide support and recognition through web-based information for voluntary activities which communities have already decided to take.

Ecosystem Initiatives
Ecosystem initiatives involve individuals, communities and governments across Canada in responding to sustainable development issues from an ecosystem approach – recognizing the interrelationships among land, air, water, wildlife and human activities.

Great Lakes 2000
Great Lakes 2000 was launched in 1989 as the action plan to fulfil Canada's commitments under the 1972 Canada-U.S. Great Lakes Water Quality Agreement to protect and sustain the world's largest freshwater ecosystem. It integrates programs across 7 federal departments and involves close partnerships with community organizations, individual citizens, industry groups, academics, municipal governments, and the province of Ontario. Community-based action is a central part of developing and implementing Remedial Actions Plans for 17 Canadian Areas of Concern. Already, more than 50 percent of the actions necessary to restore these areas have been implemented.

Atlantic Coastal Action Program
Environment Canada used the Atlantic Coastal Action Pro*gram* (ACAP) as a vehicle to offer interested and affected members of civil society the opportunity to participate in facilitated joint planning to restore the coastal environments. Science and monitoring projects have supported informed decision making, linking scientists with communities. A collaborative decision-making process was adopted, and Environment Canada is now a participant/partner in 13 community-driven ecosystem initiatives in four provinces. Each initiative has produced an environmental management plan backed by partnerships and public support necessary for implementation. Results have included pollution prevention,

restored habitats and reduced waste. What makes this approach unique, is that government becomes one of the participants, not the proponent.

National Pollutant Release Inventory (Working Group)
In 1997, Environment Canada held stakeholder consultations to gather input on priority issues for the development and improvement of the National Pollutant Release Inventory (NPRI). These stakeholders included all facilities reporting to the NPRI, national industry associations, environmental and labour organizations, provincial governments and other federal government departments. As part of the response to stakeholder input, Environment Canada established a multistakeholder Work Group on Substances to address 3 priority issues. This Work Group became part of the consultative process, and its report, in turn, was distributed to the broader stakeholder group for comment. The NPRI process highlights the use of a smaller technical committee to help develop the overall directions and agreement among stakeholders.

National Forum on Climate Change (Round table)
The National Round Table on the Environment and the Economy (NRTEE) brought together a citizens' panel of 25 respected, objective Canadians in a National Forum on Climate Change. Endorsed by the Prime Minister, the Forum was intended to assist Canadians to better understand the climate change issue and all its implications. The panelists were selected from a random sample of recipients of the Order of Canada, accomplished Canadians who have been recognized for their outstanding service to Canada in such areas as community voluntarism, philanthropy, visual arts, sports, education, health care and business. The Forum was unique because it began with no predetermined views on the potential impact of climate change, or on the most appropriate response for Canada. This panel of citizens was provided with the full range of expert opinion and knowledge and examined all sides of the climate change debate.

The National Forum on Climate Change presented a Declaration to the Prime Minister, all levels of government, and Canadians as a whole in June 1998. Briefings to promote and explain the Declaration and the Forum process for senior government officials, key stakeholder representatives and the public are continuing.

Accelerated Reduction and Elimination of Toxics (Voluntary Action)
The Accelerated Reduction and Elimination of Toxics (ARET) program is an example of voluntary efforts to address both environmental and economic concerns associated with pollution. Participants from 9 major industry sectors and government use this program to priorize emission reductions and determine appropriate reduction and elimination methods for 30 persistent, bioaccumulative and toxic substances, as well as significant reductions in emissions of another 87 toxic substances.

During 1997, over 300 facilities from across Canada used ARET to demonstrate the results of their efforts to reduce emissions. The Stakeholders Committee and other interested parties, including ENGOs, reviewed the progress and agreed to an independent evaluation of the program before renewing ARET. An advisory committee was created to evaluate the effectiveness, efficiency, participation and other impacts of the program. The findings of this evaluation will be available in the fall of 1999. In addition, the New Directions Group, comprised of leading industry executives and environmentalists, released a report identifying criteria and principles for the use and design of voluntary and non-regulatory initiatives to achieve environmental policy objectives. This report will also be considered in developing a renewed ARET.

ARET participants continue to monitor, implement and develop new technologies, implement pollution prevention measures, update their action plans and report on progress through the annual reports submitted to the ARET Secretariat.

Appendix B: International Influences

The United Nations Environmental Program (UNEP) is developing a mechanism for continuous policy consultation at the regional and global levels known as the Global Environmental Outlook (GEO) Consultative Process. In 1996, the Summit of the Americas held the Canadian National Civil Society Consultations. Involving representatives of business, industry, non-governmental organizations, academic society, Aboriginal groups and government organizations, the Summit aimed at building consensus on priority issues regarding sustainable developing in the hemisphere, including public participation. The Free Trade Area of the Americas (FTAA) invites input from civil society to analyze and present the range of views to the FTAA Trade Ministers through the Committee of Government Representatives on Civil Society. The Organization of the American States (OAS) has drafted the Inter-American Strategy for the Promotion of Public Participation in Decision-Making for Sustainable Development (ISP) to advance issues of sustainable development at the hemispheric level. At the Fourth Ministerial Conference: Environment for Europe in 1998, the Economic Commission for Europe submitted a Convention on Access to Information, Public Participation Decision-Making and Access to Justice in Environmental Matters. The objective of the Convention is to contribute to the protection of the right of every person of present and future generations to live in an environment adequate to his or her health and well-being.

In its Environmental Review Framework, Canada's Export Development Corporation specifies that an Environmental Review Report must demonstrate that a project has been proposed in compliance with host-country requirements for public consultation. The World Bank requires consultation with project-affected groups and local NGOs for specific categories of projects. When a full environmental assessment is required, public consultation must take place during at least two stages. Although the Ex-Im Bank, the U.S. export credit agency, does not have an explicit public involvement policy, it considers consultation an inherent part of the socio/economic, socio/cultural analysis of an environmental assessment. And the Inter-American Development Bank has prepared a *Resource Book on Participation* to focus on stakeholder involvement in project preparation and implementation.

The cumulative impact of these undertakings is both the development and expectation of a climate of consultation in which decisions are made - and these expectations go well beyond issues of the environment to encompass the broader issues of sustainable development.

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CANADA-CHILE AGREEMENT ON ENVIRONMENTAL COOPERATION

PUBLIC CONSULTATION AND PARTICIPATION IN ENVIRONMENTAL MANAGEMENT IN CANADA AND CHILE

February 2002

TABLE OF CONTENTS

1 INTRODUCTION 1

2 OVERVIEW OF THE SITUATION IN CHILE 2

2.1 Context 2
2.2 Public Participation in Environmental Management 3
2.3 Public Participation in Management Tools 3
2.4 Public Participation in the Environmental Impact Assessment System 3
2.5 Public Participation in Standards 6
2.6 Diffusion of the Norms and Community Participation 6
2.7 Participation in the Prevention and Decontamination Plans 7
2.8 Public Participation in Policies and Public Hearings 8
2.9 Strengthening of Environmental Management Stakeholders 8
2.10 The Sustainable Development Council 9
2.11 Consultative Councils 9
2.12 The Council and Fund of the Americas 10
2.13 Municipal Responsibilities for Environmental Management 10
2.14 Environmental education programs in support of educational reform 10

3 OVERVIEW OF THE SITUATION IN CANADA 12

3.1 Preparation of the Canada Report 12
3.2 Canadian Context 13
3.3 Canada's Environmental Management Regime 14
3.4 Environment Canada's Legislative Framework 15
3.5 Supporting Structures 17
3.6 Policy and Guidance 19
3.7 International Initiatives 23
3.8 Trends and Challenges in public involvement 25
3.9 Approaches and Tools for Engaging the Public 31
3.10 Consultation Initiatives 33
3.11 Conclusion 41
3.12 Glossary 42
3.13 Bibliography 43

1 INTRODUCTION

Environmental management is the collective responsibility of individuals, communities, industry, business, organizations and institutions, governments, and countries. Increasingly, governments recognize the value and importance of participation by civil society in environmental management, and are responding to the public's desire to be included in decision-making processes on matters that affect them. Public participation is viewed as integral to having an effective environmental management regime by both the government of Chile and Canada.

The commitment by both governments to public participation is reflected in the *Canada-Chile Agreement on Environmental Cooperation* (CCAEC), under which the two countries undertake to foster opportunities for participation. Article 10 (6) of the Agreement directs the Council to promote and, as appropriate, develop recommendations regarding: public access to information concerning the environment that is held by public authorities of each Party, and the opportunity to participate in decision-making processes related to such public access.

The purpose of this joint project is to promote transparency and public participation in environmental management. The objectives are four-fold:

- to enhance and strengthen the knowledge on participation of civil society in environmental management and to promote environmental citizenship and awareness in Canada and Chile;
- to share experiences and best practices with respect to public involvement in environmental decision making;
- to facilitate access to information on non-governmental and governmental public participation initiatives currently underway in Canada and Chile; and
- to work towards more effective civil participation in protecting the environment within the context of sustainable development.

Both countries prepared their own section for this report, and contributed to the introduction and the conclusion sections. The Chilean Commission for the Environment (CONAMA) and Environment Canada have striven to report on existing models, mechanisms, approaches and tools for public participation in environmental management as well as trends, opportunities and challenges related to public participation in their countries.

During the first meeting of the Council in November 1998, Canada and Chile agreed to promote civil society participation in environmental management. The 1999 Annual Program and Budget for CCAEC activities included provision for investigation of the role of public consultation and participation in environmental management.

In June of 2000, the Council of the CCAEC broadened the scope of a project it will undertake jointly to: encourage dissemination of knowledge and information; to facilitate the establishment of partnerships and networks within and between Canada and Chile; and to support shared domestic and international priorities. There are three themes in the workplan: enforcement and compliance with environmental legislation; public participation in environmental management; and trade and the environment. One of the projects was a workshop on public participation in Chile, September 2000. Chaired by the Joint Public Advisory Committee, a consultative body which provides advice to the Council on matters relating to the Agreement, this workshop included representatives from various

sectors of society who expressed their views and concerns regarding the CCAEC, its work program and the environmental situations in Canada and Chile.

This 2002 report repeats information from the 1999 Report about the foundations that continue to underlie the environmental management regimes in each country. It also provides an update on the supporting structures and initiatives that affect how the public is currently participating in shaping and implementing these regimes.

2 OVERVIEW OF THE SITUATION IN CHILE

2.1 CONTEXT

Public participation is a requirement for democratic governance. Although it is not a new process, this concept, which is based on experiences and schools of thought from different sources and countries, has been recognized and positioned as a phenomenon that has played a fundamental role in ensuring the democratic development of Chile in the last decade alone.

The importance of public participation was evident early in the government's most recent coordination management efforts. Thus it can be pointed out that President Lagos's management explicitly resulted in the proposal to strengthen civil society and promote public participation in the development and implementation of public policies and programs during that period. This led to the development and implementation of a broad national policy for public participation, which is being implemented by the Ministerio Secretaría General de Gobierno (SEGEGOB) [Ministry Secretary-General of the Government] and applies to the entire public system. The key components of the policy include:

- **Enactment of the President's instructions on public participation:** The government's commitments were delivered as instructions to each ministry. The principles are proper treatment, transparency, equality of opportunity and respect for the independence and diversity of civil society organizations.

- **Creation of a public council to strengthen the civil society:** The council consists of 28 citizens from different social organizations that have proven records and experience, as well as the offices of the undersecretaries of five ministries. The Council developed a series of proposals in four areas (legal, financing, institutional reinforcement and other forms of collaboration) that were submitted to the President and that were used to enhance the proposed national policy on public participation.

- **Development of a broad national policy on public participation:** Work on this component is still underway; it will be released to the public once it is completed.

In accordance with the information provided by the Ministry Secretary General of the Presidency (SEGPRES), the process of reforming and modernizing the state structure is currently underway. One of the pivotal aspects of this reform is the introduction of widespread public participation in public management.

2.2 Public Participation in Environmental Management

As mentioned above, the procedures for public participation in environmental management are provided for in both the General Environmental Law (Law No. 19.300) published in 1994 and the *Política Ambiental para el Desarrollo Sustentable* [Environmental Policy for Sustainable Development] approved by the Board of Directors of CONAMA in 1998.

Environmental institutionality and the *Sistema Nacional de Gestión Ambiental* (SNGA) [National Environmental Management System], which is made up of all the public organizations involved in this issue, were developed based on the above-mentioned law and policy.

Majority of the management tools provided for in Law 19.300 are in full effect and are equipped with the set of regulations required to be operational.

From the point of view of public participation, the following are the fundamental guidelines for implementing and operating the SNGA:

- Equality of opportunity in terms of access to information;
- Transparency in the environmental decision-making process;
- Availability of spaces where social stakeholders involved in the management process can recognize their legitimate differences and draft agreements;
- Respect for the diversity and independence of social organizations.

These principles have resulted in the application of the various management tools as described below.

2.3 Public Participation in Management Tools

Participation procedures have been set out in various management tools provided for in Law 19.300. In addition to defining specific areas and times for public consultation, they have also developed broader programs aimed at covering the so-called participation cycle, namely, anticipated or early participation that occurs prior to the decision-making process, public participation during the participation period stipulated in the law and public participation after the decision is made.

In addition, significant progress is being made to develop instruments for the participation process, such as environmental education and the environmental protection fund. These topics will be discussed further.

Below is a more detailed description of the key formal areas for public participation in environmental management in terms of both prevention and reparation of environmental damage:

- Environmental impact assessment system;
- Environmental quality and emission standards;
- Prevention and clean-up plans;
- Public hearings.

2.4 Public Participation in the Environmental Impact Assessment System

Definitions and objectives

The LMBA considers, for the Environmental Impact Evaluation System (SEIA) a citizens' participation mechanism that will seek to inform the population about the accomplishments and impacts of investment projects and to collect their observations in order to consider their incorporation into the environmental rating. This mechanism is of special importance because society is ever more aware of the environmental problems and concerned about the quality of life that is directly affected (positively and/or negatively) by the great number of investment projects. Consequently, their concerns, complaints and demands to participate in matters that affect them are ever increasing.

The process for civil society's participation as set out in the LMBA for the SEIA (Art. 27) constitutes a basic platform or general framework that requires the publication of a signed summary of the Environmental Impact Study in the Official Gazette or in a national or regional newspaper, giving the opportunity for improvements to be included as established by Art. 26. Said Article states that "It will be in the responsibility of the Regional Commissions and of the National Environmental Commission, as the case may be, to establish the mechanisms that will ensure the informed participation of the organized community in the process of rating the Environmental Impact Studies submitted to them".

Within this context and taking into account the several experiences developed since the promulgation of the Basic Law, CONAMA began, in September 1997, to implement citizens' participation programs in a systematic manner for different investment projects submitted to the SEIA, be they regional or interregional. With the implementation of these programs a participatory methodology was applied that includes social participation techniques (group meetings, public fora, etc.). The axis of such programs is to ensure the delivery of the information about the investment projects within the context of the SEIA, gather the comments of the population and classify it within the 60 days as set out in the Basic Environmental Law.

The specific objectives of these programs are:

- To make information available regarding the Environmental Impact Studies submitted in order that the community may know and understand the positive and negative impacts of the project.
- To ensure that a diversity of opinions will be expressed in the events of public participation organized for the discussion of the project.
- To guide the different opinions within the public participation process within the context of the SEIA.
- Create participation opportunities for persons, groups and/or communities with limited access to pertinent information regarding the projects.
- To design and implement a methodology that will make possible the submission of comments by the community to the Environmental Impact Study of the project.

Phases

These programs consist of five basic phases, which must be considered as flexible tools that can be adapted to each individual case:

Phase 1: Diagnosis and Focus
This phase consists of a series of activities needed to identify the general forum in which the public participation process will be developed as well as the key community representatives (individuals

and/or legal entities) who will participate in the process; the various groups involved; its specific characteristics and key points that are causing or will cause conflict, in order to be able to implement adequate mechanisms for subsequent phases.

Phase 2: Preparation
This process is a series of activities that will provide participating members of the public with the information they need: Law 19.300; SEIA; the administrative stage of the project evaluation process; the meaning and characteristics of the public participation process; and, especially, the features, impacts and methodologies associated with the project.

Phase 3: Public debate
This phase consists of activities that will encourage meetings and dialogue among the parties as well as an exchange of opinions on the project, thereby ensuring that all the stakeholders (authorities, NGOs, the community, universities, intermediary organizations, etc.) are involved.

Phase 4: Systematization of public opinion and proposed deliberation
This internal CONAMA phase consists in organizing and systematizing observations gathered from individuals or legal entities during the 60 days of participation. This phase must be carried out immediately following the deadline for public participation so as to be able to incorporate the opinions gathered into the project assessment process and, by extension, add the comments and relevant answers to the Environmental Rating Resolution.

Phase 5: Information on the results of the public participation period and the Environmental Rating Resolution
This phase is two-pronged. The first part consists in developing and implementing a closing of the public participation program that will be distributed to all those who took part in the process. This termination can be done either in writing or at a meeting during which the events of the 60 days are summarized and the compilation of observations is presented. It would be best to carry out this phase as early as possible after the end of the public participation period.

The second part focuses on the final environmental decision in respect of the project created in the Environmental Rating Resolution. This phase, which in certain instances is carried out much later after the end of the public participation period, must provide detailed explanations for the decisions made in order to ensure that supporting arguments are transparent. This activity can either be carried out by sending Environmental Rating Resolutions to those who contributed observations or, preferably, by CONAMA organizing a public hearing to explain its decision.

Early Community Participation

This refers to an informal means of participation that assumes early involvement of the community in the environmental evaluation of the investment processes. The experience gathered by SEIA shows that the participatory processes triggered once the project has been designed and becomes part of the SEIA process awaiting for environmental approval generates, on many occasions, concerns and uncertainty on the affected population. This, to a great extent, because they do not feel included, that their closest interests are endangered and have fear of the potentially negative environmental and social impact.

In order to minimize such uncertainty and to channel adequately past environmental demands it is important to create opportunities for early participation before the Studies are introduced into the

System. The assumption is that early involvement by the public minimizes the conflict between the proponent and the community, and:

Allows for the modification of possible conflicting aspects of the project before these are fully resolved in the Environmental Impact Study.
Promotes the establishment of a relationship of cooperation and understanding between the proponent and the community.
Allows for the identification and discussion of non-environmental issues of interest to the community and the company, and thus may not be brought up in the formal public participation.

2.5 Public Participation in Standards

Definition and Objectives

The standards of environmental quality set the desired environmental norm. These must guide the design of environmental public policies and all productive activities set up in the country. They set the baseline of environmental quality that we aspire to, therefore participation in this activity is essential.

There are two types of environmental quality: primary, when they protect human health, and secondary when they protect the rest of the components of the environment. The primary norms are applicable throughout the territory of Chile, no so the secondary ones, these can be set in a more restricted territorial area.

The emission standards must be set with territorial specificity. That is to say, they will only be valid over the area set out by the decree and will correspond to the environmental characteristics of the area they apply to. The different environmental capacity to receive emissions, effluents and residues without degradation of its quality must be taken into account.

The changes brought about by the LGBMA regarding legislation and procedures of formulation of the norms previously in force can be summarized as follows:

- They must be promulgated by Supreme Decree.
- The proposed norms must be formulated in its technical aspects taking into account social, economic and political considerations.
- The mandatory process for the approval of the norm includes public sector, private sector, scientific and community consultation and the observations that are submitted by these sectors must be given due consideration.

2.6 Diffusion of the Norms and Community Participation

The Priority Plan of Norm Setting must be approved by the Directive Council of CONAMA, published in the Official Gazette and in a newspaper of national circulation. It shall fix the areas to be regulated for a period of two years and is determined, following consultations, in March of every year. Once the Priority Plan of Norm Setting is established an analysis of each case is conducted and, through a Decree of the Executive Directorate, it comes into force after the 150 days that the preparation of the Draft Project of each of the norms takes. The constitution of a file containing the resolutions to be adopted, the consultations and observations made and all the information related to the formulation of the norm must also be made known.

During this period, a deadline is set for the reception of technical, scientific and social background information on the norm to be adopted. Any individual or legal entity may formulate these observations and scope.

The background information must be properly justified and delivered in writing to the national or regional CONAMA, as appropriate.

Once the norm Draft Project is prepared, CONAMA submits it for consultation. A summary of the Norm is published in the Official Gazette and in a newspaper of national circulation on the Sunday following its publication on the Official Gazette. Also, a copy of the file is transmitted to the CONAMA's Consultative Council (or to COREMA's, as appropriate) for the release of it's opinion.

During the sixty days following the publication of the Draft Project any person or organization may submit its comments on the Draft Project of the Norm. Said comments must be reasonable and must be accompanied by technical, scientific, economic, judicial or social background information supporting them.

2.7 Participation in the Prevention and Decontamination Plans

Definition and Objectives

The country has environmental assets the must be recovered. Following the promulgation of the LGBMA several environmental legislative tools were created that are aimed at the environmental recovery of areas that have been declared as saturated with contamination, or of latent contamination, where the contamination levels have not yet surpassed the norm but are at worrying levels.

These tools are aimed at confronting the problems of contamination. In areas declared as latent, contamination prevention plans must be implemented whose objective is to prevent that the established limits of environmental quality are not exceeded. In areas declared as saturated, where the limits have been exceeded, the mechanism must be the implementation of a plan to decontaminate, aimed at reaching the established standards of the Norm of environmental quality. If only one of the indices is surpasses the Norm, the decontamination plan must be implemented.

The declaration as "latent" or "saturated" must be backed up by the measurements carried out or must be certified by qualified public institutions.

Preparation of the Plans and Community Participation

After an area has been declared as latent or saturated and the resolution is published in the Official Gazette and in a national circulation newspaper, starts the 120 day period of collection of technical, scientific, social and economic background data regarding the latent or saturated area. Any individual or legal entity can submit observations or data.

The information must be duly backed up and submitted in writing to a regional or national CONAMA, as appropriate.

At the same time, a determination is made of what scientific studies will be conducted and on the preliminary background for the formulation of the plan. These must contain information about the following:

Location and types of sources of contamination
Magnitude and characteristics of the emissions
Estimate of the negative impact of the emission on the health of the population
The characteristics of the area where the contaminants are being emitted
The means that may be used to decontaminate the area
An estimate of the social and economic impact of the use of such means

Publicizing the Plan

Once the draft project of the plan is prepared, CONAMA submits it for consultation. Its summary is published in the Official Gazette and on the Sunday following, in a newspaper of national circulation.

Also, a copy of the file is forwarded to CONAMA's (or COREMA's) Consultative Council, as appropriate, for them to issue an opinion.

During the sixty days following the publication of the draft project, any person or organization may submit observations regarding the contents of the draft project of the plan. These observations must be reasonable and must be supported by technical or social background data.

2.8 Public Participation in Policies and Public Hearings

In order to get the public involved in formulating environmental policies and creating public accounting mechanisms, CONAMA is developing a new action plan that will increase the transparency and credibility of the National Environmental Management System.

The aim of the program is to establish mechanisms to provide the public with information, encourage them to take part in consultations and be involved in the policies developed by the institution. In order to account for decisions made on environmental issues and to provide transparent management, CONAMA intends to hold public hearings to discuss projects submitted to the Environmental Impact Assessment Board.

In addition, observations culled from public debates held across the country will be used to develop general outlines and institutional commitments that explain the achievements and impact of public participation on the Environmental Management System.

2.9 Strengthening of Environmental Management Stakeholders

The Environmental Protection Fund

An organized community has access to different mechanisms to finance environmental management projects that are considered of priority. One of them is the Environmental Protection Fund (FPA), a rotating fund created with the promulgation of the LBMA. This fund is managed by CONAMA. The objective of this fund is "To provide partial or full funding for projects or activities aimed at the protection or recovery of the environment, the preservation of nature or the conservation of environmental assets".

From the point of view of expanding community involvement, the Fund is used to encourage local community initiatives geared toward improving the environment. The Fund contributes a maximum

amount of $4,000,000 toward each program. Organizations may seek technical support from any institution deemed reliable for the design and implementation of the project.

The Fund received its first set of applications for funding in 1997. The Fund has provided over 350 projects with a total of $1,500,000,000 in financing.

These projects were conducted primarily by neighbourhood groups, producers' associations and sports clubs. Other organizations included municipalities, the *Fundación Nacional para la Superación de la Pobreza* [national foundation for the fight against poverty] and private corporations involved in environmental education.

Environmental management training for employees of non-governmental organizations

This program was created in 1999 in conjunction with the Fund of the Americas to provide environmental training for professionals and technicians working in non-governmental organizations.

In 1999 and 2000, consortiums of non-governmental organizations and universities announced the names of and accredited graduates in various regions of the country.

Raising environmental awareness in the civil society

CONAMA's regional directorates developed a series of initiatives aimed at adding the issue of the environment to the public agenda. These initiatives included regional television and radio programs, courses, forums and events.

They also introduced measures to encourage the youth to combine their artistic expression with environmental issues. This measure resulted in an annual national plastic arts competition.

2.10 The Sustainable Development Council

The Sustainable Development Council was constituted in fulfillment of the agreements of AGENDA 21.

Its objective is to advise the President of the Republic through studies and to propose actions to promote and protect Sustainable Development. To discharge its responsibilities the Council must: i) keep itself informed annually regarding the status of sustainable development within the country; ii) submit to the President of the Republic an agreed view of sustainable development in the medium- and long-term; iii) submit to the President of the Republic, in a document of public knowledge, its suggestions and proposals on this subject.

It is composed of 92 members and its characteristic is the wide representation of the players in Chilean society through the main leaders of the public and private sectors and the population at large.

2.11 Consultative Councils

The Consultative Council of the National Commission for the Environment and the Regional Consultative Councils are advisory bodies to the CONAMA's and COREMA's Consultative Councils, respectively. They are bodies created under the Basic Law of the Environment and through which the authorities gather the various social sectors to reach better decisions in environmental matters.

It is composed by representatives from Universities and Academic Centers, Non-Governmental Organizations, the labour force, entrepreneurs and a representative of the regional Superintendent or of the President of the Republic, as may be required.

2.12 THE COUNCIL AND FUND OF THE AMERICAS

The Council of the Americas is a body that provides financial support to community environmental projects. It is a bilateral body (Chile-USA) and it is composed of public and private sector representatives.

It is made up of eleven members with a majority participation of the civil society, represented by six advisors together with four representatives of the Government of Chile and one from the United States.

This Fund finances activities of national Non-Governmental Organizations aimed at:

- Enhancement of community management at the local level.
- Education and training for persons and organizations of the civil society.
- Conservation and sustainable management of natural resources for small-scale productive development.

2.13 MUNICIPAL RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT

It is possible to identify two types of responsibilities of the Municipalities in environmental management.

- Those that relate to the municipalities own activities, among which are the enforcement of transport regulations and public transit, over construction and urbanization, urban planning, cleaning and landscaping and the Community Development Plan.
- Those activities shared with other bodies of Public Administration that in environmental matters relate to: the Environmental Impact Evaluation System, Environmental Control and Responsibility.

Within the context of the SEIA, municipalities are bound to inform the community on the environmental impact of investment projects that are submitted for environmental assessment.

Within the field of control, they must require the courts to apply sanctions for non-compliance with the norms of pollution control plans. Municipalities also receive complaints formulated by citizens related to the infringement of environmental norms, and reports them to the appropriate control agency. Finally, any person may request the municipality to start an "action for environmental damages", with the purpose of obtaining remedy for the damage caused to the environment, at the expense of the party responsible for the damage.

2.14 ENVIRONMENTAL EDUCATION PROGRAMS IN SUPPORT OF EDUCATIONAL REFORM

CONAMA joined forces with the Ministry of Education, the *Corporación Nacional Forestal* [National Forestry Board] and the Fund of the Americas to put together various complementary

environmental education programs to ensure that the issue was adequately addressed in the country's ongoing education reform process.

The programs implemented are aimed at various players in the educational community:

- *Club de Forjadores Ambientales* [environmental enthusiasts' club]: The aim of this club is to encourage children and young adults to take a leadership role in the environmental affairs of their educational community. The program was created in 1999 and, to date, has registered approximately 40,000 students from more than 1,100 educational institutions in 13 regions across the country.

  As secondary participants in the program, teachers are in charge of coordinating activities for group of students in respective institutions. This year, teachers were provided with a series of multimedia, distance training courses in environmental education, leadership and public participation. The first group was made up of 350 teachers who were awarded scholarships for the courses.

- *Escuelas al Aire Libre* [Open Air Schools]: The objective is to train teachers to incorporate open-air environmental educational activities in the curriculum. This program was created in 1999 and, to date, has trained over 300 teachers in the 13 regions countrywide. All the teachers have created open-air environmental education programs for their students – a total of 12,000 children and young adults. One of the features of this program is progressive training. Teachers take a three-level refresher course annually. To date, teachers from the 13 regions have taken all three courses and are accredited to train colleagues in their community or region on topics learnt in the first two levels.

- *Programa de Educación Ambiental Rural* [Rural Environmental Education Program]: The objective of this program is to incorporate an environmental component in educational development programs conducted by rural institutions. The program was implemented in 2000 in the four southernmost regions of the country; another region will be added this year. It provides the technical assistance and funding required to develop and conduct educational projects. To date, 45 educational institutions have participated in the program.

- Nationwide collection of environmental education textbooks for high schools: This program's objective is to provide high-school students with up-to-date and systematic information on regional environmental realities. The program was created in 1999, and, in March 2002, will launch the first phase of the textbooks collection in six regions across the country.

- Training programs for community-based environmental educational coordinators: In 2000, community coordinators of environmental education under the auspices of the *Corporaciones de Educación Municipal* [Municipal Boards of Education] in four towns in Region VIII were provided with training on environmental education. The objective was to provide teachers with further training in this area and equip them to share their knowledge with the teachers in their respective towns.

  In 2001, this experience was replicated in two towns in Region VIII as well as four others in Region X.

3 OVERVIEW OF THE SITUATION IN CANADA

3.1 PREPARATION OF THE CANADA REPORT

This status report was prepared in consultation with the Party Secretariats, through the review of domestic and international documents on the requirements and implementation of public involvement in environmental management, and on assessments of both the government and public regarding the effectiveness of practices in Canada.

Organization of the Canada Report

The Canada portion of this report is divided into 8 parts. The Introduction and Section 2 provide a rationale and context for the report; Section 3 describes the federal environmental management regime in Canada; and Section 4, describes the range of parties interested in the environment. Section 5 outlines the trends and challenges in public participation, both domestically and internationally. Section 6 reinforces previous information regarding Environment Canada's framework for planning consultations and the use of consultation tools. Section 7 describes consultation activities, current and completed. And Section 8 provides a brief summary. This report also includes a Glossary of terms and a Bibliography of reference materials with associated web addresses where relevant.

Key Terminology

Canada's "environment management regime" is set within the context of sustainable development, the consideration of economic, social and environmental factors in decision making.

In addition, for the purposes of this paper, *the following terms will be used interchangeably to refer to participation by the public in environmental decision making: public involvement, public participation, public engagement and public consultation. The federal government refers to the Government of Canada.*

Consultation Participants

Those interested in and affected by the policies and programs of Environment Canada represent a wide range of views, expertise and history. They include individuals with a single concern or contribution, highly-organized associations with formal memberships, mandates and governance structures, and governments, both domestic and international. Environment Canada has long-standing and sometimes formal relationships with some of these parties. The Department, however, also continues to build new relationships within Canada and around the world as the scope of environmental issues is better understood beyond sectoral and political boundaries.

Key Participants

Key participants in environmental decision making exist within and outside government, domestically, regionally and internationally. Consultations can be bilateral (for example, between the federal government and a province, between a federal department and an industry, or between Canada and another country), multilateral (for example, among the parties of the *North American*

Free Trade Agreement, involving Mexico and the United States), and multistakeholder (the *National Implementation Strategy on Climate Change*).

Within government, domestic consultations can occur at different stages and may involve a directorate within a single department, other government departments, or other jurisdictions.

Outside government, participants often include:

- the Canadian Environmental Network (CEN)
- environmental non-government organizations (ENGOs) not represented by the CEN;
- industry/business (both representatives of specific sectors and associations, and members of individual companies);
- Aboriginals;
- the voluntary sector;
- youth (e.g. Youth Round Table on the Environment)
- communities (e.g. Sustainable Communities, Millennium Eco-Communities Initiatives)
- academics
- institutions, and
- individuals.

The individual has a significant role in Environment Canada's environmental management regime. Whether as a one-time participant in a consultation or as an on-going member of a group that implements programs in support of sustainable development, the individual is essential to the public consultation process.

The role of the media is also important, not as an interest group, but as a vehicle for engaging Canadians and communicating their views to Government and vice-versa. Televised "townhall" meetings are becoming common on news programs in which moderators explore the views of Canadians about current issues.

3.2 CANADIAN CONTEXT

The Government of Canada has federal legislative requirements to consult that encompass all departments and agencies in the federal system.

Federal Commitments: Shared Responsibilities

In recognition of the environment as a shared responsibility of governments, Aboriginal peoples, the private sector, voluntary and community-based organizations, and individual Canadians, the federal government has made formal commitments to open and transparent policy and program development.

Social Union Framework Agreement (SUFA)

The commitment of the federal government to involve Canadians in the development and evaluation of public policies, programs and services through consultation and citizen engagement processes is reflected in the 1999 *Social Union Framework Agreement (SUFA)*, an agreement between the Government of Canada and the governments of the provinces and territories. *SUFA* recognizes the need to "ensure appropriate opportunities for Canadians to have meaningful input into social policies and programs." The *Agreement* also commits governments to work in partnership with "individuals,

families, communities, voluntary organizations, business and labour, and ensure appropriate opportunities for Canadians to have meaningful input into social policies and programs".

The Accord between the Government of Canada and the Voluntary Sector

The *Accord between the Government of Canada and the Voluntary Sector* is a framework agreement that seeks to improve the way the federal government and the voluntary sector work together. The *Accord* applies to the voluntary sector which consists of organizations that exist to serve a public benefit, are self-governing, do not distribute any profits to members, and depend to a meaningful degree on volunteers. The *Accord* also applies to the departments and agencies of the Government of Canada. Developed through consultative processes, the *Accord* describes a vision for a more collaborative relationship and articulates principles to shape and guide the relationship between the Government and the voluntary sector in reaching shared goals.

Guidelines for Engaging Canadians in Public Decision Making

To support the commitment to consult Canadians further, the Office of the Auditor General recommended that the Privy Council Office (PCO) take the lead in updating the guidelines provided to departments on the conduct and evaluation of consultations. Building on the *1990 Task Force on Service to the Public Report*, the Auditor General called for "new ways of thinking and a new approaches to engaging Canadians in public decision making".

In response, the PCO in partnership with the Treasury Board Secretariat, and in collaboration with federal departments and with input from experts outside government, has been updating the 1992 federal consultation guidelines through a multi-year consultative process. While PCO continues to provide direction to departments in their consultation strategies, the Treasury Board Secretariat is establishing guidelines for evaluating federal consultation activities.

3.3 CANADA'S ENVIRONMENTAL MANAGEMENT REGIME

Canada's environmental management regime reflects shared responsibilities and shared jurisdictions. This foundation has implications for Environment Canada's approach to engaging interested and affected parties in decisions about the environment. It also dictates, in some cases, the role Environment Canada can take as a leader and a partner in defining and meeting sustainable development objectives.

Federal Commitments: Shared Jurisdictions

As the environment is a shared jurisdiction in Canada, cooperation on environmental management is essential. The *Constitution Act* of 1867 does not refer to the environment; authority to act in environmental matters comes from other powers assigned to the federal, provincial and territorial levels of government. Key provincial environmental responsibilities derive from, among other things, jurisdiction over the management of provincial Crown lands, resources, property and civil rights, and local works and undertakings. Important federal environmental responsibility has been derived from a number of powers, especially those related to fisheries, interprovincial and international trade and commerce, criminal law, and peace, order and good government. Agriculture is defined as a shared federal-provincial responsibility.

Federal Ministers and departments share in the responsibility of delivering the Government's environmental stewardship and sustainable development goals. Certain departments, such as, Fisheries and Oceans, Health, Agriculture and Agri-food, Indian Affairs and Northern Development, Transport, Natural Resources and Canadian Heritage (involving national parks), however, have responsibility for aspects of environmental protection. Provinces, which have much of the responsibility for environmental management, have a ministry of environment which addresses pollution abatement, nature conservation, and in some cases, natural resources.

Environment Canada's Mandate

Environment Canada, created in 1971, is a science-based federal department in the business of helping Canadians live and prosper in an environment that is properly protected and conserved. The Departmental goal is to help make sustainable development a reality in Canada. Environment Canada has five regional offices which deliver programs and services for environmental conservation and protection, and atmospheric services. Within federal jurisdiction, the Department's main focus is pollution prevention and control, nature conservation and weather services.

3.4 ENVIRONMENT CANADA'S LEGISLATIVE FRAMEWORK

Environment Canada's legislative framework is anchored by key Acts which describe not only the Department's environmental mandate and obligations, but also the requirements to consult. Key federal environmental legislation in Canada includes the *Canadian Environmental Protection Act (CEPA)* and the *Canadian Environmental Assessment Act (CEAA)*.

Canadian Environmental Protection Act

Canadian Environmental Protection Act (CEPA), passed in 1988 and renewed in 1999, is the joint responsibility of Environment Canada and Health Canada. The *Act* now requires the creation of environmental quality objectives, guidelines and codes of practice, and regular reporting on the state of Canada's environment. The renewed *CEPA* also has new opportunities and requirements for public participation. There is the opportunity to share information through the Environmental Registry, the right to request that the Minister investigate an alleged violation of the *Act*, new citizen right-to-sue provisions, and enhanced whistle-blower protection. *CEPA 1999* also gives members of the public the opportunity to participate in many decisions taken on toxic substances, including the right to request the addition of a substance to the Priority Substances List and the right to provide comments on various initiatives.

The involvement of the public in *CEPA*-related matters is an integral part of the success of this *Act*. Industry and individuals are invited to participate in a wide variety of public consultations through notices published in Canada's official parliamentary journal, the Canada Gazette. Some consultations are also posted on various Environment Canada websites, such as that of the *CEPA Priority Substances Assessment Program* for the Priority Substances List consultations. Since 1999, there have been 80 *CEPA*-related consultations and there are four currently underway.

Canadian Environmental Assessment Act

Canadian Environmental Assessment Act, passed through Parliament in 1992 and brought into force in 1995, requires environmental assessment of all new projects wherever a federal authority meets certain conditions. Through *CEAA*, the Government of Canada is committed to facilitating public participation in environment assessments and providing access to the information on which those environmental assessments are based. *CEAA* includes provisions for participant funding (financial support for people and representatives of organizations to participate in mediation and panel reviews). There is a limited amount of funding available for one or both phases of the environmental assessment. In the first phase, this funding can be used to help individuals or organizations prepare for and participate in scoping meetings and to review draft guidelines that outline the issues to be addressed. In the second phase, the funding may be awarded to help review the Environmental Impact Statement or to prepare for and participate in public hearings convened by the panel. *CEAA* also provides for a public registry for all projects undergoing a review by a mediator.

Proposed Species at Risk Act

The *Accord for the Protection of Species at Risk*, supported by federal, provincial and territorial ministers responsible for wildlife in 1996, committed to a national approach for the protection of species at risk. The goal is to prevent species in Canada from becoming extinct as a consequence of human activity. One of the commitments of the *Accord* was to establish complementary legislation and programs that would provide for effective protection of species at risk throughout Canada.

The proposed *Species at Risk Act (SARA)* aims to protect wildlife at risk from becoming extinct or lost from the wild (extirpated), with the ultimate objective of helping their numbers to recover. The legal list of wildlife species at risk will be based on those designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), a multistakeholder committee comprised of federal/provincial/territorial representatives, academics and other experts in the field. Where possible, this Committee makes decisions by consensus regarding designations.

The proposed *SARA* has been the focus of numerous consultations and it contains provisions for subsequent consultations. These include assessing and classifying the status of wildlife species using the best available scientific, community and Aboriginal traditional knowledge. There will be a mandatory requirement for developing recovery strategies and action plans for endangered or threatened species, and management plans for species of special concern; these will be done in partnership with the provinces, territories, wildlife management boards, Aboriginal organizations, landowners, fishing interests, universities, industry, environmental groups and other appropriate individuals. Also, to provide greater openness, transparency and accountability, the Minister will convene, at least once every two years, a round table of persons interested in matters related to the protection of species at risk. The round table would advise the Minister on these matters and its recommendations would be placed in the public registry. The Minister would be required to respond within 180 days and his or her response would also be placed in the public registry.

Administration of Acts in Part and Whole

Environment Canada also administers a large number of acts, in part (e.g., the *Fisheries Act* and regulations), in whole (e.g., the *Canada Wildlife Act* and regulations) and in assistance to other departments (e.g., the *Hazardous Products Act*).

Auditor General's Act

Amendments to the *Auditor General's Act* in 1995, led to two institutional changes at the Federal level. First, the position of Commissioner of the Environment and Sustainable Development (CESD) was created in the Office of the Auditor General. Second, federal departments and agencies are now required to prepare and table in Parliament a Sustainable Development Strategy (SDS). In developing departmental Strategies, federal departments and agencies are instructed to consult with their clients, partners and stakeholders on departmental priorities for sustainable development and how to achieve them. The first and second SDSs were tabled in Parliament in 1997 and 2000 respectively, in keeping with the requirement for a renewal of the strategies every three years. The CESD is accountable to Parliament for monitoring and reporting on the processes used by departments to develop their SDSs, such as consultations, and measuring departmental performance in meeting their SDS commitments.

The environmental petitions process, established in 1995 under the *Auditor General's Act*, provides a formal means for Canadians to bring their concerns about environmental issues to the attention of federal ministers and departments and obtain a response to their concerns. For example, citizens and organizations can ask federal ministers to explain federal policy, investigate an environmental problem, or examine their enforcement of environmental legislation. The CESD is responsible for handling environmental petitions on behalf of the Auditor General of Canada and coordinates the process, monitors response, and makes sure that the questions that Canadians pose and the issues that they raise are addressed by federal ministers and their departments.

Access to Information Act and the Privacy Act

The *Access to Information Act and the Privacy Act (1983)* exists to provide Canadians with a right of access to information in records under the control of federal institutions. This right is in accordance with the principle that government information should be available to the public.

3.5 SUPPORTING STRUCTURES

In addition to the foundation of a legislative framework, there are both formally-mandated organizations and informal, voluntary organizations focused on the environment and supportive of public involvement in decision making.

Federal Structures

The National Round Table on the Environment and the Economy (NRTEE) is a multistakeholder agency independent of the federal government, committed to providing decision makers and opinion leaders with reliable information and objective views on the current state of the debate on the environment and the economy. The NRTEE was legislated by an Act of Parliament in 1994 to serve as a catalyst in identifying, explaining and promoting principles and practices of sustainable development. NRTEE's members are appointed by Order in Council, representing a broad range of regions and sectors - including business, labour, academe, environmental organizations and First Nations.

The *Canadian Environmental Assessment Agency* is charged with putting *CEAA* into practice and is dedicated solely to administering and promoting environmental assessment of policies and practices of the federal government. It reports directly to the Minister of the Environment and operates

independently of any other federal department or agency. Environmental assessment provides a means of integrating environmental factors into planning and decision-making processes to promote sustainable development. Public participation in these environmental assessments is integral to the decision-making process.

The House of Commons *Standing Committee on the Environment and Sustainable Development,* composed of elected Members of Parliament, regularly conducts formal public hearings on a range of government policy and legislative issues related to the environment and sustainable development, such as the renewal of *CEPA* and the proposed *Species at Risk Act*. Witnesses from a variety of sectors, groups and individuals are frequently called upon to provide their views and perspectives. The Committee has the power to report back to Parliament and make specific recommendations to the Government. The Committee can also request that the Government table a comprehensive response to a Committee report.

Federal /Provincial/Territorial Structures

Shared responsibility for environmental management requires communication, collaboration and consultation among federal, provincial and territorial governments. Three principle structures promote inter-jurisdictional cooperation in environmental matters: the Canadian Council of Ministers for the Environment (CCME), the Joint Meeting of Ministers of Energy and Environment (JMM), and the Wildlife Ministers' Council of Canada.

The Canadian Council of Ministers for the Environment is the major voluntary intergovernmental forum for discussion and cooperation on environmental issues of national, regional and global concern. Based on consensus decision making, the environment ministers from the provinces, territories and the federal government meet at least twice per year to address priority environmental issues.

The *Joint Meeting of Ministers of Energy and Environment* is comprised of provincial, territorial and federal energy and environment ministers who focus primarily on climate change. Both deputy ministers and senior officials support their ministers in this work. Specifically, Joint Ministers manage Canada's national response to climate change, oversee the development of Canada's National Implementation Strategy on Climate Change and annual national business plans to implement the Strategy. The *National Air Issues Co-ordinating Committee on Climate Change (NAICC-CC)*, through the *National Air Issues Steering Committee (NAISC)*, provides advice to Joint Ministers and overall direction to the management of the national process, including the development of Canada's National Implementation Strategy on Climate Change and national business plans. The *NAICC-CC* is composed of officials from federal, provincial and territorial governments representing, for the most part, energy and environmental ministries. The *National Climate Change Secretariat* manages and supports the national engagement process and the work of the *NAICC-CC*.

The *Wildlife Ministers' Council of Canada* is comprised of the ministers of federal, provincial and territorial governments, in this case, those responsible for wildlife. The Council, supported by deputy ministers and the Canadian Wildlife Directors' Committee, meets annually to work collaboratively to conserve Canada's wildlife and its habitat.

Non-governmental Structures

Community and voluntary sector involvement on environmental issues is essential in Canada. The federal government recognizes the need to build partnerships with communities and to renew its relationship with voluntary organizations that serve and sustain them. In December 2001, the Government signed a national accord with the voluntary sector, laying a new foundation for active partnership with voluntary organizations in the service of Canadians. The *Accord* spells out the values, principles and commitment that will underlie the future relationship between the Government of Canada and Canada's voluntary sector. It is also committed to engage tens of thousands of young Canadian volunteers to participate in community and national environmental projects.

Other non-governmental structures also play a key role in Canada's environmental management regime. The environmental non-government organization (*ENGO*) community is essential. Institutions (e.g. universities, foundations) are also important. For example, the *International Institute for Sustainable Development (IISD)* promotes sustainable development in decision-making internationally and within Canada. Employing policy research, information exchange, analysis and advocacy, the *IISD* works with government, business and civil society to enable societies to live sustainably. Community participation in decision making is one of its strategic priorities over the next five years.

The *Public Policy Forum* is a non-partisan, non-profit organization aimed at improving the quality of government in Canada through better dialogue between government, the private and voluntary sectors. The *Forum's* members are drawn from business, federal and provincial government, the voluntary sector and the labour movement. Through research and discussion, members examine the way government operates and they make recommendations to reform public sector management in Canada.

One of the key environmental non-governmental organizations that supports public consultation and participation in environmental management is the *Canadian Environmental Network (CEN)*. The *CEN* is a non-profit, umbrella network linking approximately 2000 environmental groups across Canada to support the contributions of a variety of grass roots players, namely educators, organizers, researchers, and community activists. The overall objective of the *CEN* is "to support, facilitate and advance the work of its member groups to protect the earth and promote ecologically sound ways of life". As a non-advocacy network, the *CEN* does not take positions on issues, rather it actively encourages more equitable consultation with environmental groups in setting the government policy. The *CEN* is comprised of a national office in Ottawa and 12 affiliate networks representing the 10 Canadian provinces, as well as the Yukon Territory and Canada's First Nations. The caucus structure – sub-networks within the *CEN* that address specific environmental concerns such as water, agriculture and biotechnology – enables information sharing and joint activity. The *CEN* is a key Environment Canada partner, facilitating access to the opinions of small communities, regional interests, and providing a source of issue-based expertise.

3.6 POLICY AND GUIDANCE

There is a growing body of policy, literature, guidance and best practices to assist both government and the public in planning and participating effectively in consultations. Environment Canada draws on these sources to inform four primary areas of its work including program delivery, regulatory/legislative development, information delivery and policy development.

Federal Guidelines

Federal Guidelines affirm the democratic right of Canadians to have their views considered in government-decision-making. They also affirm the need for active involvement on the part of Ministers, senior managers, line departments and central agencies in supporting a consultative culture in the Government of Canada.

A 1998 Consultations Directive requires federal departments to identify in each Memorandum to Cabinet the key stakeholders consulted, the consultation process employed, the outcomes, and any follow-up consultations planned as part of the implementation of a policy. Other perspectives relating to particular policy proposals (e.g. gender-based analysis, diversity, official languages) should also be included.

In addition, in 1990, the Cabinet directed departments to consider environmental concerns at the strategic level of policy, program and plan development. This directive was updated in 1999 to strengthen the role of environmental assessment, by clarifying the obligations of departments and agencies, and linking environmental assessment to the implementation of Sustainable Development Strategies.

Consultations with Aboriginals

Gathering Strength: Canada's Aboriginal Action Plan is a renewal of the Canadian government's relationship with Aboriginal people. It is based on recognizing past injustices and building a joint plan for the future. Conditions in Aboriginal communities are generally much worse than in those of non-Aboriginal neighbours. The intent of the Plan is to address the needs of communities by building partnerships with Aboriginal people. An essential aspect of the Plan is the need to consult Aboriginal people to define this partnership and to shape a common vision. In consulting with Aboriginal people, it is important to consider: legal obligations that may have an impact on Aboriginal or treaty rights; potential infringement on Aboriginal government jurisdiction; and the development of Aboriginal-specific policies.

The importance of consulting with Aboriginal peoples was reinforced in the 1999 *Social Union Framework Agreement* which also commits governments to "work with the Aboriginal peoples of Canada to find practical solutions to address their pressing needs".

In the Environment Canada *Sustainable Development Strategy 2001-2002,* it is recognized that Aboriginal peoples have long-standing knowledge of sustainable development. The Strategy recommends engaging Aboriginal peoples through consultations to incorporate their ecological knowledge with the Department's decision-making processes.

Draft Federal Policy and Guidelines on Consulting and Engaging Canadians

The challenge of more effectively involving Canadians in the participation of policy development is being addressed by the Privy Council Office and the Treasury Board Secretariat, in a draft paper (ongoing review), entitled *Policy Statement and Guidelines on Consulting and Engaging Canadians.* The draft paper recognizes that in order to serve Canadians, a "citizen focus" must be built into all its activities, programs and services. An integral component of this service is providing information to citizens, and consulting and engaging citizens in the policy development process. The policy statement and guidelines explore new ways in which governments will be able to consult and engage Canadians.

The draft *Guidelines* provide a mechanism to advise government managers on the planning, implementation and evaluation of consultation and citizen engagement processes. The intent of the *Guidelines* is to support managers to:

- increase involvement of citizens in the policy development process;
- increase inclusion in the consultation and citizen engagement processes;
- enhance consultative culture in departments and agencies;
- improve the results of consultation and citizen engagement processes in the policy-making process; and
- improve decision-making, leading to more responsive policies and programs.

The draft *Guidelines* also address the rapidly changing environment in which the Government consults and engages Canadians, particularly on the impact of new technologies. Depending on a number of factors such as target audience, numbers, and geographic location, the document recommends a range of approaches Government may take to provide opportunities for Canadians to become more involved in government decision making. The range includes the provision of information which enables citizens to participate in the public policy process, consultation and citizen engagement interventions to invite greater citizen involvement in the development of policies, and partnerships, where there is shared decision making.

In addition to these draft federal *Guidelines*, public consultations are becoming part of management training priorities in the Public Service and have become a component of policy courses developed by the Canadian Centre for Management Development, the federal training institution for middle managers and senior federal officials. These initiatives form a foundation on the part of central agencies to provide public servants with skills to plan, implement and assess federal consultation processes.

A Guide to Green Government

Developed by a multistakeholder committee, *A Guide to Green Government* helps the federal government departments and agencies prepare their sustainable development strategies. Signed by the Prime Minister and ministers of key federal departments, this *Guide* includes a 6-step approach to preparing a strategy that includes consultation with clients, partners and other stakeholders.

Environment Canada Principles of Consultation

The Canadian government has experienced the importance of involving Canadians in decisions that affect them. Increasingly governments and organizations (public and private) have developed principles to guide their decisions and actions related to public participation. In Environment Canada's policy, *Our Commitment to Effective Consultations*, principles outline the departmental approach to planning and implementing an average of 90 public involvement activities per year. It also includes participant funding guidelines that describe conditions in which interested parties can receive support to engage in consultations.

The planning and implementation of consultations are guided by:

- establishing and maintaining an open and transparent process;
- ensuring participants have the means for participation;
- selecting appropriate consultation techniques for each situation;
- establishing clear timelines, context and goals;
- defining ground rules for everyone;
- providing appropriate resources;

- incorporating results in decisions making; and
- maintaining ongoing communication with participants.

These Departmental principles reflect the directions outlined in the draft federal *Guidelines* (4.5.3).

Environment Canada's Sustainable Development Strategy 2001-2003

Sustainable development is an approach recognizing that social, economic and environmental issues are interconnected, and that decisions must incorporate each of these aspects if they are to be good decisions in the longer term.

The second Sustainable Development Strategy (SDS) was released in 2001 and the content was influenced by the results of a number of consultations. Environment Canada conducted a two-phase consultation: the first phase focused on a discussion paper in meetings open to all interested parties in seven cities across the country. The results of these meetings helped the Department draft the SDS which was mailed to approximately 350 stakeholders representing community-based and national level non-government organizations, industry and private sector organizations, Aboriginal organizations, academics, youth and federal and provincial/territorial government departments. Environment Canada also engaged in a number of coordinated consultations involving other departments with a focus on developing a Federal SDS for the North, and health and other cross-cutting issues.

The Strategy included a theme of Partnerships and Sustainable Communities which promotes partnerships, seen as a requirement in the transition to sustainable development. In support of this, Environment Canada committed to: put in place partnership strategies with business, non-governmental organizations and universities by 2002; put mechanisms/strategies in place to ensure that stakeholders, partners and other communities of interest have regular opportunities to put forward their ideas, concerns and perspectives on community sustainable development issues; and develop government-on-line projects to support the delivery of sustainable communities initiatives related to federal programming.

A Guide to Public Involvement

The Canadian Standards Association (CSA), a not-for-profit, independent, private sector organization, has published more than 1000 standards, approximately one-third of which have been referenced into law by provincial and federal authorities. The CSA established a multistakeholder technical committee to develop *A Guide to Public Involvement* which presents a decision-making framework for planning, implementing and evaluating a broad range of public consultation activities. The committee operated under consensus decision-making rules and the report was subject to a board peer review prior to publication in 1995. Environment Canada formed a partnership with the CSA to assist with the development of this *Guide* and has since developed a training program based on this model to promote a common practice for implementing consultations between the Department and the public and with other levels of government.

Building Consensus for a Sustainable Future: Guiding Principles

There are a number of round tables in Canada which focus on environmental issues from a provincial/territorial or federal perspective. The Canadian Round Tables of Canada, including the Canadian Council of Ministers of the Environment, developed *Building Consensus for a Sustainable Future: Guiding Principles* to communicate their approach to involving the public in sustainable development and in consensus decision making. Representing the experience of round tables across

Canada, this guide describes the principles on which consensus can be developed to support policies and practices for a sustainable development.

Commission for Environmental Cooperation

The Commission for Environmental Cooperation (CEC) is an international organization created by Canada, Mexico and the United States under the *North American Agreement on Environmental Cooperation (NAAEC)*. The CEC was established to address regional environmental concerns, help prevent potential trade and environmental conflicts, and to promote the effective enforcement of environmental law. This *Agreement* complements the environmental provisions of the *North American Free Trade Agreement (NAFTA)*.

The Joint Public Advisory Committee (JPAC), together with the Council (composed of cabinet-level or equivalent representatives of the three countries) and the Secretariat comprise the CEC. The JPAC, established to advise the Council, follows a framework that is intended to maximize public involvement to ensure open and effective dialogue and engagement among all elements of the public, and to establish a trinational network of diverse stakeholders that are interested in the CEC's mission. Its vision is to promote continental cooperation in ecosystem protection and sustainable economic development, and to ensure active public participation and transparency in the actions of the full Commission.

3.7 INTERNATIONAL INITIATIVES

Canada's involvement in international environmental issues and organizations has grown substantially. Each of these international organizations and commitments has requirements and obligations, some of which include the rules for participation and decision making. Environment Canada's preparation for, and follow up from meetings and decisions with international organizations often include consultation with interested parties.

Rio Declaration

> *"environmental issues are best handled with the participation of all concerned citizens at the relevant level"*
>
> Principle 10 of the 1992 Rio Declaration

Public participation rests on the belief that those who are affected by decisions should have the opportunity to influence the outcomes of those decisions. This belief is strongly held by Canadians. In response, the government has established, and continues to develop ways in which to support meaningful public involvement.

United Nations Environmental Programme

Canada is a signatory to many international agreements that support and promote public involvement in environmental decision making.

The United Nations Environmental Programme (UNEP) is the leading international forum for governments to address current and emerging environmental issues. It has been central to the negotiation of major international environmental agreements, including ones addressing hazardous chemicals, trade in endangered species and banning ozone-depleting chemicals. UNEP is developing a mechanism for continuous policy consultation at the regional and global levels known as the Global Environmental Outlook (GEO) Consultative Process.

The Honourable David Anderson, Canada's Environment Minister, has become the first Canadian to be elected President of the Governing Council of the United Nations Environment Programme. He was elected in 2001 for a two-year term at a meeting of some 80 environment Ministers from around the world.

Summit of the Americas

The Third Summit of the Americas took place in Quebec City, in April, 2001. One of the issues addressed was public participation, described as a key element of the decision-making process in environmental policies. The intention was to maximize opportunities to increase knowledge, public education and participation, transparency and accountability on environmental issues. This would include enhancing access to information about environmental conditions and technologies at the community level, in keeping with national legislation.

Free Trade Area of the Americas

The Free Trade Area of the Americas (FTAA) invites input from civil society to analyze and present the range of views to the FTAA Trade Ministers through the Committee of Government Representatives on Civil Society. The Organization of the American States (OAS) has drafted the Inter-American Strategy for the Promotion of Public Participation in Decision-Making for Sustainable Development (ISP) to advance issues of sustainable development at the hemispheric level.

National Strategy on Environmental Education and Sustainability

During the United Nations conference on the environment and development (Rio Earth Summit, 1992), the Canadian government, along with other participating countries, made a commitment to develop a national strategy with a focus on education, raising public awareness, and training with respect to the environment and development, as recommended in Chapter 36 of *Agenda 21*. The chapter covers three principal realms of action: "a) reorienting education towards sustainable development; b) increasing public awareness and c) promoting training".

The Minister launched a national consultation which led to the development of a *National Strategy on Environmental Education and Sustainability*. The goal of the document, which will be adapted to the Canadian situation, is to reflect the country's socio-educational and environmental issues and to provide a basis for discussions among Canadians, in order to stimulate their involvement in the fulfillment of this strategy.

One of the principles of the *Strategy* is focused on commitment and participation. "It is essential to ensure that all the segments of society are involved. This principle must develop a sense of responsibility and commitment on the part of individuals and communities, work places and public services. It is important to persuade people to change their attitudes, develop a capacity for analysis and action and to transform their society with a view to a viable future."

Economic Commission for Europe

At the Fourth Ministerial Conference: Environment for Europe in 1998, the Economic Commission for Europe submitted a *Convention on Access to Information, Public Participation Decision-Making and Access to Justice in Environmental Matters*. The objective of the Convention is to contribute to

the protection of the right of every person of present and future generations to live in an environment adequate to his or her health and well-being. Canada has not yet signed this Convention.

Export Development Canada: Environmental Review Framework

Following a series of consultations in 2001, Export Development Canada specified in its revised Environmental Review Framework that an Environmental Review Report must demonstrate that a project has been proposed in compliance with host-country requirements for public consultation.

Other institutions which support development internationally have similar requirements. The World Bank requires consultation with project-affected groups and local NGOs for specific categories of projects. When a full environmental assessment is required, public consultation must take place during at least two stages. Although the Ex-Im Bank, the U.S. export credit agency, does not have an explicit public involvement policy, it considers consultation an inherent part of the socio-economic, socio-cultural analysis of an environmental assessment. And the Inter-American Development Bank has prepared a *Resource Book on Participation* to focus on stakeholder involvement in project preparation and implementation.

The cumulative impact of these undertakings is both the development and expectation of a climate of consultation in which decisions are made - and these expectations go well beyond issues of the environment to encompass the broader issues of sustainable development.

3.8 TRENDS AND CHALLENGES IN PUBLIC INVOLVEMENT

There has been no diminishment of public interest or involvement in consultations with Environment Canada since the 1999 Canada-Chile report. Many of the trends identified at that time continue; some new ones have emerged. In particular, the roles of Aboriginals, the voluntary sector and the use of technology in consultation have continued to increase.

Federal Challenges

In 1998, the Clerk of the Privy Council Office highlighted the importance of taking the views of citizens into account when shaping policy.

> *"Citizens want a direct, substantive and influential role in shaping policies and decisions that affect them. They want to be heard. And they want a commitment that leaders will take citizens' views into account when making decisions."*
>
> Jocelyne Bourgon
> Clerk of the Privy Council Office

In 2001, the new Clerk of the PCO described a vision of E-Government that forecast how citizens could become more involved. E-Government stands for:

- electronic (use of technology in government)
- enabled (a government that is equipped to meet its objectives), and
- enabling (empowering citizens and facilitating the links between them and their elected officials).

The Clerk indicated that to foster the kind of innovation and excellence that citizens and ministers expect it would be necessary to encourage collaboration within government, with other levels of government and with citizens and other sectors of society, while respecting ministerial accountability.

Mel Cappe
Clerk of the Privy Council Office

Complex environmental issues require that decision makers be well informed of the range of concerns and interests surrounding the issues. Decision makers also need to understand the degree of public concern about an issue as well as the potential consequences of each option they consider to address it.

As involving the public has become standard practice for the Canadian government, a number of trends have emerged which further challenge how the public participates in environmental management decisions.

Limitations of Traditional Public Involvement

Research at PCO determined that Canadian citizens have traditionally reflected their views regarding the policy-making process through their Members of Parliament, voluntary organizations, and stakeholder groups. While these vehicles remain effective, they have certain limitations: they are often not as inclusive as they need to be to reflect the wide range of views of Canadians; they have not kept pace with the rapidly evolving changes in technology; and they have not been systematically integrated into the Government's policy-making process.

High Expectations

Increasingly, civil society expects to be involved in and to influence public policy. Increasingly, governments are responding with more opportunities for the public to become involved in defining the issues and their solutions. And, increasingly, the lines between domestic and international policy are blurring; complex horizontal issues related to sustainable development demand the involvement of local, national, regional and international interests.

Citizens expect government to be accountable for its decisions and actions. They also expect government to distinguish between informing the public and consulting the public on these decisions. More and more, citizens' expectations for meaningful involvement are explicit. They want "assured listening" from the government, the knowledge that their views will be seriously considered. And they want to know what decisions the government ultimately makes, and the rationale behind whether their views were incorporated or not. In turn, government expects participants to make valuable contributions to the overall exchange of information and decision-making process. This can place heavy demands on representatives who are frequently consulted.

In his recent report on Canada's environmental and sustainable development practices, the Commissioner for the Environment and Sustainable Development identified three significant weaknesses in consultation: participants in consultations were given limited feedback on what the government had heard and how their views had been reflected in the sustainable development strategies; there was limited co-ordination among departments which have complementary responsibilities; and there was limited involvement of senior managers. In response to the Commissioner's recommendation for central guidance, the Privy Council Office has undertaken to establish consultation guidelines for the federal government. In parallel, the Treasury Board

Secretariat, in its capacity to provide leadership through developing accountability frameworks and promoting best practices, will be preparing evaluation criteria for consultations.

Expectations regarding acceptable practices are also increasing with the number of guidebooks and policies being developed. In Canada and internationally, numerous organizations are explicitly developing guidelines, policies and principles to shape public participation in environmental management regimes. Within the North American Agreement on Environmental Cooperation, for example, Environment Canada has played a key role in revising the Guidelines for Submission on Enforcement Matters Under Articles 14 and 15 of the NAAEC to improve transparency and fairness of the public submission process.

Continued Emphasis on Voluntary Initiatives

A climate of deregulation continues in Canada; where practical, the government prefers to gain the cooperation and commitment of the public without imposing formal legislative and regulatory requirements. This approach has implications for how consultations are designed, the lengths of time participants need to reach agreement and ultimately, their commitment to take action.

Continued Demands on Human and Financial Resources

A report on Environment Canada's multistakeholder consultations in the mid-1990s indicated that participants were experiencing "consultation fatigue" as result of the numerous consultation opportunities. A more recent survey adds weight to this, indicating that although a large percentage of the general public believes there should be increased emphasis on consultation, over three-quarters suggested that they neither have the time nor the knowledge to offer useful advice on complex issues.

In addition to the challenges inherent in engaging willing and able participants in consultations, once engaged, there is the challenge of reconciling diverse interests (environmental, economic, social-cultural and cross-cutting). And there is the ongoing requirement to allocate sufficient resources (technical and consultation expertise, time and finances) to ensure that the issues are adequately addressed. It is a challenge for both the public and government to set priorities and allocate resources for the most critical issues.

Emphasis on Information Management/Information Technology

Introduction

Through its 1999 *Government on Line (GOL)* initiative, the federal government has pledged, "...by 2004 to be known around the world as the government most connected to its citizens..." Through its "*Connecting Canadians"* initiative, the federal government is bringing Internet access to schools, and to rural and remote communities, as well as connecting voluntary sector organizations across Canada. The impact of this and other similar initiatives could be highly effective, as Canada is uniquely positioned to use the new technologies, with over 60% of Canadians currently having Internet access.

Guidelines for Online Consultations and Engagement

A draft document, *Guidelines for Online Consultation and Engagement* was developed by PCO in December 2000, as a preliminary attempt to promote and support public consultation through information technology. The document describes a wide range of applications, such as Email lists, Online Polling, Live Chat, Bulletin Board, Web Based Discussion, and Web Forum, and assesses the "right" application to be used in relation to the type of consultation and engagement being sought.

Based on the context for dealing with the public (time frames, target audience, numbers of people involved) the Guidelines recommend specific applications to increase effectiveness of online communication. The Guidelines also address general principles to guide online activities, such as transparency, inclusiveness, responsiveness, simplicity and innovation.

Public Consultation Portals

Certain federal departments, such as Finance, Health, Foreign Affairs and Justice have instituted Public Consultation Portals that provide the public with access to information on departmental products, policies and programs. The Portals are interactive, permitting members of the public an opportunity to express their views on specific issues to become meaningfully involved in the decision making process. In addition, some departments provide links with dates and locations of consultations where members of the public may want to become involved, lists of committees that seek advice from the public, and advance notice of upcoming plans.

An Information Management/Information Technology (IM/IT) environmental scan was carried out by the IM/IT Joint Table of PCO in March 2001. This scan identified general trends, opportunities, and gaps that exist in the areas of information and communication technology for obtaining public involvement through the voluntary sector. Scan results concluded that voluntary organizations face a constant need to remain current with respect to IM/IT.

In order to address these challenges, potential government approaches were suggested to increase public involvement. These approaches include: funding hardware and software, coordinating volunteer technical expertise, funding technical services to assist voluntary sector management to make wise IM/IT investments, and extending the programs available to assist small businesses in adopting information technologies to the voluntary sector.

The IM/IT Joint Table has developed five preliminary approaches that may be used to develop programs to assist the sector in the use of IM/IT:

- create mechanisms for promoting information on best practices for IT in the voluntary sector
- create independent applications assessments to support the dissemination of unbiased, knowledgeable advice on technology solutions and training
- provide technical expertise to voluntary sector organizations using a toll free number, web site and workshops
- use a consortium of voluntary sector organizations to oversee technology solutions. Note that this is already occurring in certain sectors, and
- create program funding to allow organizations to acquire capital providing funds for resources and equipment (directly or through projects).

Canadian Information System for the Environment (CISE)

The Task Force on the *Canadian Information System for the Environment (CISE)* was created as a result of the Budget 2000 decision relating to environment and sustainable development indicators to address the need to more fully integrate economic and environmental policy decisions. The Task Force presented its final report to the Minister of the Environment on October 23, 2001. The report contains the Task Force's recommendations on the design and implementation of a *Canadian Information System for the Environment*. The recommendations call for a national, more shared and strategic approach in collecting, managing, assessing and disseminating environmental information. The Task Force recommends that the *CISE* provide:

- environmental data to support a national set of sustainable development indicators currently being developed by the National Round Table on the Environment and the Economy as well as national environmental indicators;
- comprehensive, continuous and credible reporting to Canadians on the state of the environment and the state of environmental management in Canada;
- means to set national priorities for environmental information development, through dialogue between users and producers of environmental information across Canada;
- tools to integrate environmental information from various sources and to integrate environmental information with other types of information such as social, health and economic;
- tools to explain and predict connections among environmental change, human actions and human well-being;
- means to improve access to and awareness of environmental information, including, but not limited to the Internet;
- means to foster "communities of practice" on specific environmental topics; and
- tools to foster environmental involvement at the local level.

The Minister of the Environment is currently reviewing the recommendations to determine how best to implement them with his federal, provincial and territorial colleagues and other partners.

Continued Demands to Create a "Level Playing Field"

Associated with the need for adequate resources is the challenge of supporting a "level playing field" among participants whereby they have equitable opportunities to receive, understand and provide information to the consultation process. To promote equitable opportunities in the consultation process, government continues to face the challenge of finding effective and economic ways in which to address differences among participants in areas such as technical expertise, language, geography and access to information.

Continued Demands for Transparency and Access to Information

The purpose of the *Access to Information Act* is to provide a right of access to information in records under the control of a government institution. This is in accordance with the principles that government information should be available to the public and that exception to this right should be limited. This *Act* applies to all issues, including the environment.

Specific to pollution prevention, there is a growing trend internationally by industry and government towards greater public disclosure of chemical releases and transfers. In Canada, the National Pollution Release Inventory (1992) is the only publicly accessible database of on-site releases to the environment of substances of concern from facilities nation-wide. Public disclosure of this

information enables citizens and communities to take action regarding their concerns of risk to their health or environment.

New Consultation Methods

Domestically and internationally, the emerging role of "citizen engagement" is augmenting more commonly-practised strategies, such as the multistakeholder process. The Organization for Economic Cooperation and Development (OECD) has recently undertaken a two-year study of citizen engagement in which Canada will participate. The addition of technology to consultation has changed the way government and civil society exchange views. The Internet and the World Wide Web are frequently used to exchange information and gather feedback from a broad range of interested parties. Videoconferencing plays a small role in bringing together participants from a wide geographic area for brief meetings. These new tools may provide additional opportunities to engage the public on the environment, and support more traditional consultation methods.

Ongoing Need for Co-ordination

With the hundreds of consultations undertaken annually across Canada, there is a need to coordinate the participation and input of interested parties (both government and the public). This coordination is required within the Department, among federal departments, between levels of government, internationally, and among interested parties.

Increasing Role of the Voluntary Sector

Voluntary organizations are under pressure to deliver a greater number of services and raise larger amounts of money to support their activities. As well as adapting to the information age, the sector is facing difficult challenges such as recruiting volunteers among a population that is more pressed for time than ever, and ensuring organizations have the resources and expertise to work effectively.

An important joint government-voluntary sector review culminated in a 1999 report entitled, *Working Together: A Government of Canada/Voluntary Sector Joint Initiative*. The report focused on three primary issues: building a new relationship with the sector, strengthening capacity in the sector, and improving the regulatory framework.

Environmental Scan on Volunteering in Canada

Under the *National Volunteerism Initiative (NVI)*, a Joint Table was established to expand volunteer efforts, promote volunteering and strengthen volunteerism in Canada. In preparation, the NVI Joint Table commissioned the Canadian Centre for Philanthropy to prepare an *Environmental Scan on Volunteering and Improving Volunteering*. Based on research on public attitudes and opinions about volunteering and on key informant interviews with volunteers and individuals from voluntary organizations, businesses and governments, the scan identified current strengths, gaps and suggested areas for improvement. Although volunteerism is well regarded, and although the numbers of volunteers increased between 1987 and 1997, only one-third of Canadians volunteer, and about 8% of volunteers contribute 72% of the volunteer hours.

The Voluntary Sector Initiative

In June 2000, the federal government announced $94.6 million over five years to strengthen the relationship with the voluntary sector and to increase its capacity. More specifically, the *Voluntary Sector Initiative (VSI)* addresses the following key areas:

- development of an Accord to articulate the shared principles for relations between the voluntary sector and the federal government;
- improved access by the sector to the benefits of information technology and information management;
- increased recognition of the sector with the public and government;
- development of capacity for voluntary organizations to respond to Canadians' needs;
- proposed new approach to financing the voluntary sector that is long-term and sustainable; and
- streamlined reporting requirements and regulations that affect the voluntary sector.

Part of *VSI's* mandate is to enhance policy development in federal departments. Under *VSI's* Sectoral Involvement in Departmental Policy Development (SIDPD) initiative, a $28.5 million fund was created for projects to facilitate voluntary sector involvement in the departmental policy process.

In 2001, SIDPD results were announced for Round I. Four Environment Canada projects were successful in obtaining funding: Strengthening Capacity of the Canadian Environmental Network (a national umbrella group representing ENGOs), Enabling Voluntary Action for Species and Habitat Conservation, Building Youth Policy Capacity, and Creating Public Policy for Sustainable Development. Results of the second and final round of the SIDPD, will be announced in February, 2002.

Aboriginal Peoples and the Voluntary Sector Initiative

In July 2001, the Voluntary Sector Initiative invited Aboriginal stakeholders from across Canada to a strategic planning exercise to formulate an approach to engage and include the Aboriginal community in the *VSI* consultations to strengthen the voluntary sector in Canada. Prior to this time, there had been very little Aboriginal participation in the *VSI*.

Participants at the session agreed that Aboriginal input needs to reflect the grassroots level. This could be achieved with the help of Aboriginal organizations through their infrastructure and linkages at regional and local levels. The diversity of the Aboriginal community needs to be recognized both, in terms of cultural differences and in geographic location. The cultural realities that impact on the definition of what voluntary means in the Aboriginal community will be key to communicate the *VSI* message and to establish buy-in from Aboriginal groups. Using traditional systems such as the Clan system would help to reach input from segments of the Aboriginal community not always consulted. The *VSI* has agreed to explore financial options to help support the work of an Aboriginal reference group, steering committee and coordination required for effective Aboriginal input.

3.9 Approaches and Tools for Engaging the Public

This section repeats, for the most part, the information provided in the 1999 report. It represents a basic model for planning, implementing and evaluating a public involvement process.

Introduction

Environment Canada has supported and endorsed *A Guide to Public Involvement* to promote effective consultations. This decision-making framework describes a step-wise approach to conducting a broad range of public involvement initiatives, all of which share the considerations outlined below.

Planning

Effective planning, implementation and evaluation of public participation in Canada's environmental management regime are contingent on several key factors being addressed within the context of guiding principles. They include:

- a clear purpose;
- preferred levels of agreement among participants;
- a profile of participants (for example, numbers, demographics, level of interest/concern and awareness of the issues);
- resources (for example, time, expertise, and finances);
- implications of other initiatives (for example, impact of decisions in related areas, synergy with other initiatives);
- appropriate consultation tools (for example, the combination of tools and approaches that support both the purpose of the consultation, the issues and the interested parties); and
- an evaluation of the process and outcomes of the consultation (for example, quantitative and qualitative data, on-going and cumulative assessments).

The complexity of issues also has implications for how these plans unfold. In each consultation, the balance among these factors differs, and it is fair to say, there has yet to be the "perfect" public consultation.

Purpose

The purpose for engaging the public and the level of desired agreement among participants are key to the overall consultation design. The purpose can range from a simple sharing of information to a complex partnership in which the government and interested publics jointly determine the issues and how to address them. They are generally characterized as:

- one-way communication; information only;
- an exchange of views; no effort to reach agreement;
- a sharing of values in an effort to understand interests, if not find common ground;
- majority rule;
- partial agreement with areas of diversity;
- consensus;
- shared decision making leading to joint implementation/monitoring of agreements; and
- through community-driven initiatives, going beyond the decision-making authority of single organizations and/or level of government to guide voluntary actions.

Although government always reserves the right to make the final decisions, it is often advantageous to implement decisions that the key stakeholders determine are both desirable and practical. As a science-based department, Environment Canada must anchor its decisions in sound scientific research while taking into account the public's views.

Participant Profile

It is important to know who is likely to participate in a consultation. The description of potentially interested parties and individuals helps government assess the range and level of concerns, as well as the capacity of participants to engage in consultation. For example, information, such as the participants' current levels of interest and awareness, helps planners estimate the time required to share information and establish a common understanding of the issues.

Resources

Given the information above, it is necessary to consider what constitutes adequate resources to involve people in ways that support the overall purpose. In estimating resources, however, the costs of not consulting are also addressed. The public can delay or overturn decisions when concern is high and no opportunity for consultation is offered.

Related Initiatives

At any given time, there are many consultations underway at the federal, provincial and municipal levels, as well as in the international arena. Whether it is pending federal legislation or an international agreement with implications for domestic action, effective planning must take them into consideration.

Appropriate Tools

In addition to the planning tools described above, there are numerous "tools" for involving the public, from town hall meetings to electronic discussion groups. Matching the appropriate tool, or mix of tools, to the overall consultation is essential. Increased electronic access by the public to government is influencing the options which Environment Canada uses when engaging input from and exchanges with the public.

Evaluation

Both cumulative and summative evaluations allow the opportunity to learn and make adjustments to subsequent consultations. Consultation plans are frequently altered based on the need to give people more time to respond, or because new information changes the scope of the discussions. Ultimately, the effectiveness of the approach used to involve participants must be assessed, as well as the benefits of the outcomes of the consultation.

3.10 CONSULTATION INITIATIVES

The following examples of the public involvement in Canada's environmental management regime capture community-based initiatives, partnerships, municipal programs, federal/provincial/territorial activities and international commitments. Each one includes public participation as an essential, and sometimes required component of the decision-making and/or implementation process.

World Summit on Sustainable Development

Sustainable development is about meeting the needs and aspirations of today's generations while protecting the interests of future generations. In September, 2002, world leaders, citizens' groups, industry and labour leaders, scientists, indigenous peoples, community leaders, and representatives of youth groups will gather in Johannesburg, South Africa, to review our global progress on implementing sustainable development principles and to chart a course of action for the coming decade. Earth Summit 2002 Canadian Secretariat has been created to coordinate Canada's preparation for the World Summit on Sustainable Development. The goal of the Secretariat is to ensure that a broad range of Canadians participate in the preparations for Earth Summit 2002. The strength of Canada's contribution to the Summit depends on broad public support of and participation in our national preparatory process.

The Secretariat has developed a plan with three key elements to engage Canadians.

- Interested Canadians will be invited to participate in electronic consultations *via* the Secretariat's web site. The Secretariat will make available its consultation document, and there will be an opportunity to contribute to and review Canada's National Report for the Summit.
- The Secretariat will target the Canadian public with a view to raising awareness of sustainable development principles and encouraging greater efforts toward sustainable development practices.
- The Secretariat will engage Canadians who have been selected on the basis of an existing expertise or awareness of sustainable development issues. The sessions will be held in each province and territory and be organized around Canada's five themes: Health and Innovation, Sustainable Communities, Stewardship and Conservation, Innovation and Partnerships, and International Environmental Governance.

The Kyoto Protocol

Negotiated under the Conference of the Parties to the United Nations Framework Convention on Climate Change, the Kyoto Protocol calls for reductions of greenhouse gas emissions by industrialized countries of 5.2 per cent below 1990 levels. The Protocol will become legally binding after it has been ratified by a minimum of 55 countries. Canada's Prime Minister stated that the Bonn Agreement had opened the door for Canada to take a ratification decision in 2002, following full consultations with the provinces, territories, other stakeholders and the Canadian public.

Citizens' Forums on Clean Air

The Public Policy Forum (PPF), a national nonpartisan, non-profit, public policy research organization, began a series of Citizen Forums to engage small groups of Canadians in informed deliberation on air quality. The first forum took place in 2001 in Vancouver, British Columbia, and involved 300 citizens, 68 of whom met in person. This group was a representative sample selected at random. Participants were surveyed regarding their views on air quality issues before and after the forum. Those who attended the Forum received background information and were engaged in small group deliberations with leading experts. Following discussions, participants presented their views to elected officials, including the federal Environment Minister, the Honourable David Anderson. The PPF intends to conduct additional Forums and to assess the behaviours and attitudes of citizens who have established a greater understanding of air quality issues. This information will be used to inform decision makers in the public, private and voluntary sectors.

Partners for Climate Protection

The Federation of Canadian Municipalities' (FCM) 20% Club has merged with the International Council for Local Environmental Initiatives' (ICLEI) Canadian Cities for Climate Protection™ Campaign. This united effort, formerly the 20% Club of Canadian Municipalities, is now named 'Partners for Climate Protection: For a Better Quality of Life' (PCP). The goal of the merged program remains to support Canadian municipal governments, to prepare and implement local climate action plans. The FCM will be the political partner for PCP, assuming responsibility for all formal relations with the Canadian federal government, and the formulation of federal climate policy within Canada with respect to local governments. The ICLEI will be the technical partner, assuming direction for activities such as software tools, technical manuals, training materials, reporting protocols, energy management, and monitoring and verification activities.

The priorities of the new program are to: build capacity; support champions; provide up-to-date information; ensure access to international municipal expertise; build model program; facilitate participation; generate feedback on what works and what does not; survey progress and build

partnerships to implement change. PCP participation has extended to 61 communities from across Canada, representing 61% of the population in rural and urban centers in almost every province and territory.

Cartagena Biosafety Protocol to the United Nations Convention on Biological Diversity

In 1995, the Parties to the UN Convention on Biological Diversity established an Open-ended Ad Hoc Working Group on Biosafety to develop a draft protocol on biosafety, specifically focusing on the transboundary movement of any living modified organisms (LMOs) resulting from modern biotechnology that might have adverse effects on the conservation and sustainable use of biological diversity. In January 2000, delegates from 138 countries adopted by consensus the International Biosafety Protocol to help protect the environment and ensure the safe transfer, handling and use of LMOs resulting from modern biotechnology. During the negotiations, Canada's delegation received advice from environmental groups, agriculture, industry, and Aboriginal and provincial representatives. Subsequent to signing and ratifying the Protocol, the government of Canada committed to broadly-based consultations to seek the views of Canadians in order to inform its decision. Views were solicited via web sites as well as a multistakeholder meeting in the fall of 2000.

Export and Import of Hazardous Waste (EIHW) Regulations

In July 2000, the Minister of the Environment urged the provinces and territories to work with Environment Canada to strengthen the standards for all facilities that accept hazardous waste, including landfills. This resulted in a national regime for environmentally sound management (ESM) developed in cooperation with the provinces and territories under the *Canadian Council of Ministers of the Environment (CCME)*. Consultations have been initiated on the amendments to the federal Export and Import of Hazardous Wastes Regulations. To ensure that landfill requirements being developed become national standards, Environment Canada, Ontario and Québec, *via* the *CCME*, will be working on revising the current *CCME* hazardous waste landfill guidelines. Environment Canada will then continue to work with provinces, territories and other stakeholders, as well as internationally, to develop broader ESM criteria and guidelines for other operations. These guidelines will be integrated into the amendment to the *EIHW* Regulations to be published in the Canada Gazette, Part 1, by December 2002 for public consultation.

Public Policy Forum: The Three Pillars

The Public Policy Forum brought together 50 leaders from government, business and the voluntary sectors (three pillars) to examine ways to strengthen the three-way partnership among the voluntary sector, government and the private sector. Their goal was to look at ways the three pillars could more effectively work together to build a healthier society, through increasing public participation in the decision-making process

The participants recognized that the situation of the voluntary sector as a partner for government and business has changed since the early 1990s. It is no longer viewed as the "weak" pillar dependent on the other two sectors for credibility and support. The voluntary sector has firmly begun to be accepted as a critical partner in efforts to create communities that are healthy and productive.

Among the key recommendations of the Forum, was the notion that the business sector develop corporate social responsibility strategies, measure their progress, and incorporate corporate social responsibility into business reporting. There should also be a better convergence of economic and social agendas. In support of this, the voluntary sector needs to better articulate why its social

agenda is important to business. Recognizing the business sector as the "third pillar" in strengthening communities, it was recommended that the corporate sector be invited to participate in the federal/voluntary sector Joint Tables.

Capacity Building within the Voluntary Sector

The *Institute on Governance (IOG)*, a non-profit organization with charitable status, promotes effective governance. The *IOG* defines governance as comprising the traditions, institutions and processes that determine how power is exercised, how citizens are given a voice, and how decisions are made on issues of public concern. Under the *Voluntary Sector Initiative*, the *IOG* obtained funding for *Environmental Non-Government Organization Process* to contribute to improved governance, communications and networking opportunities for the *Canadian Environmental Network* member organizations. The objective is to facilitate environmental group participation in consultations with business, labour, First Nations communities and governments.

The *Voluntary Sector Initiative* has also supported a *National Outreach Program* which will coordinate input among youth groups across Canada and create a unified national and international presence in policy processes. This initiative will facilitate communication and create an institutional body which will serve as a point of access for federal governments seeking to engage youth in environmental and sustainable development policy.

Capacity building within the voluntary sector and Environment Canada is the focus of *Creating Public Policy for Sustainable Development* under the VSI. By building capacity within Environment Canada to gather input from the voluntary sector, and by increasing the capacity of the voluntary sector to contribute to public policy issues related to water quality, air quality and nature, this initiative aims to develop and implement nationally-consistent, community-based ecosystem monitoring as an information source to ensure the adequacy of local policy and decision making.

The Youth Round Table on the Environment

The *Youth Round Table on the Environment (YRTE)* is a forum that brings together 17 young Canadians between the ages of fourteen and twenty-six with diverse regional, cultural, educational and linguistic backgrounds. Operating *via* consensus, the *YRTE* provides Environment Canada with input into environmental policies and programs. Meeting two to four times a year, the *YRTE* works directly with the Minister of the Environment to discuss environmental issues of importance to youth. Workshops, seminars, conferences and departmental engagements occur throughout the year, with *YRTE* members expected to provide input on how to improve youth engagement on environmental issues. *YRTE* members are also often asked to lead discussions with other youth across Canada regarding environmental issues. The Round Table has taken part in a number of national and international events, such as: The *National Consultation on Environmental Education and Sustainability*, the *International Pollution Prevention Summit*, the *National Planning Meeting for the World Summit on Sustainable Development* and the *Sixth Conference of the Parties (CoP6) in the Hague*.

Partnerships and Sustainable Communities

Strong partnerships with communities are fundamental to leveraging the greatest possible collective impact from the department's efforts on sustainability. Environment Canada has been working to enhance community sustainability through programs and services such as, regional ecosystems initiatives, and education and communications efforts. The department has focused considerable attention on building partnerships at the community level which bring together a broad range of

government, private and voluntary sector organizations. The department draws upon partnerships with communities to help address key issues of concern to Canadians: clean air, clean water, nature, climate change and weather at the local level. The department has a goal of implementing partnership strategies with business, non-governmental organizations and universities by the end of 2002.

Canada is currently in the midst of designing a citizen engagement strategy for consultations on the Sustainable Communities Theme for the WSSD. Critical to this strategy is consulting with local authorities, other levels of government, the public and private sector, community and Aboriginal groups and citizens to obtain their views and insights. WSSD Sustainable Communities Stakeholder Workshops are currently being held in three major Canadian cities. An Experts Advisory Group has also been proposed to provide advice to federal departments around the Sustainable Communities Theme for the WSSD. This Group would represent a range of public, private sector and civil society organizations with an interest and expertise in sustainable community development.

Community Interaction Program

In 1998, the Quebec Minister of the Environment and Wildlife, and the federal Environment Minister signed a three-year agreement to continue joint efforts under the *St. Lawrence Vision 2000 Action Plan*. The protection of public health, the protection of the health of ecosystems and the involvement of communities in improving access to the St. Lawrence are the three major objectives until 2003. To support these objectives, the governments of Canada and Quebec will devote $123 million and $116 million, respectively, for a total budget of $239 million.

The work leading to this third phase involved partnership and co-operation among all concerned, especially community organizations. Some 200 individuals were involved in planning Phase III. They included officials from eight federal and three provincial departments, as well as representatives of the St. Lawrence Vision 2000 Consultative Committee, *Area of Prime Concern (ZIP)* committees and Stratégies Saint-Laurent. The focus in implementing Phase III is on increased participation by communities along the river in its protection and conservation and on greater cooperation among stakeholders. The involvement of communities through Stratégies Saint-Laurent and the *ZIP* committees are vital to the implementation of the plan. Financial support is given for priority activities identified by riverside communities that are in line with identified objectives. The *ZIP* committees also receive scientific and technical support. The Consultative Committee will continue to advise the Agreement Management Committee on orientations and follow-up to Phase III activities.

The two governments also plan to continue the work initiated under the previous phases of the *St. Lawrence Action Plan*, especially with respect to the maintenance of biodiversity, protection of public health and industrial cleanup. Work with major industrial sectors continues and there is a focus on preventing pollution from small and medium-sized companies. Additional efforts will also go to clean up agricultural pollution, in order to address concerns in this area. Phase III of the *St. Lawrence Action Plan* will tackle the issues of water level management and shipping and boating, which had not been dealt with under the Plan.

Environment Canada's Environmental Partners Program

The Environmental Partners Fund (the Fund) is a $70 million federal contribution program administered by Environment Canada. The Fund has been allocated $50 million for contributions and $20 million for administration for the years from 1989-90 to 1996-97. It is designed to fund

projects that stimulate the development of local initiatives and enhance existing environmental programs. Eligible projects are funded up to 50 percent of project costs, currently to a maximum of $100,000 over two years. In 1991, the Fund became part of the Environmental Citizenship Initiative, a Green Plan initiative.

Eligible projects should not duplicate or compete with existing services, or displace work normally performed under existing or planned environmental programs at the federal or provincial level, unless they employ new techniques or procedures. Multiple partners in projects are encouraged. Other levels of government may participate but they must designate a non-profit community or environmental group as the "lead partner" accountable for the project.

The Fund encourages community groups to participate in projects that allow them to use non-cash contributions (also called "in-kind" contributions), such as volunteer labour, which are eligible for matching contributions from the Fund.

The Fund's objectives are:

- to stimulate and support the development and implementation of local action-oriented projects to enhance and preserve Canada's environment;
- to provide matching funds to encourage and enable community organizations and others to develop creative and innovative approaches to local environmental problems;
- to raise the level of public awareness of the need for, and value of, individual and collective action in dealing with both immediate and long-term environmental problems; and
- to promote a conserving society, through collective and individual involvement in local environmental initiatives, thereby contributing to the concept of sustainable development.

The government intended that the Fund would produce such results as the conservation and restoration of important wetland areas; the restoration of fish and wildlife habitats; improvements in water quality and water conservation; extension of "blue box" recycling programs; extended programs for composting biodegradable wastes; safe disposal of household hazardous wastes; and extension of office, industrial and commercial paper and other waste reduction and recycling programs. Other federal government departments and other levels of government were significant contributors to projects supported by the Fund. Contributions from those sources amounted to $37 million, or just over one fifth of the anticipated total project value of $167 million.

Partnerships span traditional jurisdictional boundaries and organizational mandates. For example, the Fund has supported such projects as development of nature gardens in local parks and school grounds; production of environment-related plays; construction or restoration of river dams and fish ladders; demonstration of sewage waste water technology; promotion of land stewardship programs; energy conservation in schools and shopping malls; and the care of injured urban wildlife. Some of these projects are the primary responsibilities of other federal departments or levels of government. Therefore, they require extensive co-operation and mutual understanding within and among governments and non-government organizations, while maintaining accountability for the use of public funds.

The Fund is delivered by six regional offices and a national office that also co-ordinates its administration. The Department allocates funds to regions and the national office using, with some modification, a formula developed by the Canadian Council of Ministers of the Environment. The process is designed to ensure an equitable allocation of funds based on population, while recognizing the need for a central national fund for projects that cross regional boundaries.

The impact of such programs and activities on environmental matters can be significant. As partnerships become a more prevalent means of government action, the resources provided from all levels of government and non-government sources have the potential to grow in magnitude.

EcoAction Community Funding Program

The *EcoAction Community Funding Program* is an Environment Canada program that provides financial support to non-profit community groups and organizations for projects that have a positive impact on the environment. This includes groups such as environmental groups, Aboriginal groups, First Nations councils, service clubs, associations and youth and seniors' organizations. *EcoAction* encourages projects that protect, rehabilitate or enhance the natural environment, and builds the capacity of communities to sustain these projects into the future. Since the *EcoAction* program was established in 1995, over 1,000 projects have been funded. Priority funding is given to projects that will achieve results in: clean air and climate change, clean water and nature.

The *Atlantic Coastal Action Program (ACAP)* is an example of this funding program. *ACAP* comprises numerous projects aimed at the environment. The *Annapolis Watershed Capacity Building Project* supports community participation to delineate sustainability options, both at the local level and within the larger ecosystem on the Bay of Fundy/Gulf of Maine ecosystem. The *Community Capacity Building and Partnering Support* project aims to build and support community partnerships and develop skills, recognize interdependencies and establish trust, enable partners to identify common goals and initiatives through consensus decision-making and collaborative problem solving. The multi-year *Pictou Landing First Nation Building Partnering Capacity* project aims to engage the Pictou Landing First Nation in developing sustainability in the Pictou Harbour watershed.

The Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem

The purpose of the *Canada-Ontario Agreement (COA)* is to renew and strengthen planning, cooperation and coordination between Canada and Ontario in implementing actions to restore and protect the ecosystem, to prevent and control pollution into the ecosystem, and to conserve species, populations and habitats in the Great Lakes Basin Ecosystem. Implementation of this *Canada-Ontario Agreement* is intended to help meet Canada's obligations under the *Revised Canada-U.S. Great Lakes Water Quality Agreement* as amended by the 1987 Protocol.

There have been five *COAs* since, 1971, the most recent of which expired in 2000. During the fall of 2001, the public was invited to comment, through a variety of means, on a renegotiated draft during a 60-day period. Drafts were available through the Canada Gazette, Part I, the *Canadian Environmental Protection Act Registry*, and Environment Canada's Green Lane. Ontario provided on-line access *via* the Government of Ontario's Environmental Bill of Rights Registry. There was also a toll-free phone number for requesting copies by mail. The Government of Canada and Ontario jointly held a multistakeholder workshop to solicit views on the draft agreement. And the Government of Canada conducted a series of four Youth Focus Groups and a workshop with First Nations. Summary comments from these consultations will be made available through the Canada Gazette, and Environment Canada's Green Lane and *CEPA Registry*.

Habitat Stewardship Program

The Habitat Stewardship Program helps Canadians protect species and their habitats. The first year (2000/2001) of the Program has seen the establishment of over 60 partnerships with First Nations, landowners, resource users, nature trusts, community-based wildlife societies, educational

organizations and conservation organizations. This public participation initiative has lead to stewardship projects resulting from partnerships with Environment Canada that have benefited the habitat of 60 nationally endangered species and over 100 species at risk.

Draft Canada-wide Stewardship Action Plan

In October 1996, federal, provincial and territorial wildlife ministers agreed in principle to the *Accord for the Protection of Species at Risk*. The *Accord* commits all parties to provide complementary legislation and programs that will effectively protect species at risk throughout Canada. Under the terms of the *Accord*, governments are cooperating to ensure that complementary legislation and programs are in place to give endangered species across Canada the highest level of protection possible.

During the September 1998 meeting of the *Wildlife Ministers Council Of Canada*, the *Accord* was amended to take account of the roles and values of stewardship in conserving species at risk and preventing species from becoming at risk.

In 1999, the *Wildlife Ministers Council Of Canada* agreed that governments, resource sectors, and conservation organizations, should work together to develop a *Canada-wide Stewardship Action Plan*. The primary goal of the *Plan* is to enhance stewardship in Canada to prevent species from becoming at risk and to support recovery efforts for species that are already at risk; it is also in support of biodiversity as outlined under the *United Nations Convention on Biological Diversity* and the *Canadian Biodiversity Strategy*. During 2002, Environment Canada, its partner departments and federal/provincial/territorial committees will be consulting with their respective constituencies to solicit views regarding the draft *Action Plan*.

Aboriginal Values and Land/Resource Management

The International Institute on Sustainable Development is currently implementing a project in northern Manitoba to integrate Aboriginal values into land use and resource management. Supported by a unique public involvement strategy, Appreciative Inquiry, this project aims to encourage Aboriginal people at the community level to make their views known and to incorporate those views in the decision-making process while striving to establish consensus on the potential value of the forest to Aboriginal people.

Aboriginal Communities and Non-Renewable Resource Development

The 2001 National Round Table on the Economy and the Environment (NRTEE) report, *Aboriginal Communities and Non-Renewable Resource Development,* described a multi-year program that involved over 200 representatives of the Assembly of First Nations, Aboriginal communities and organizations, federal and territorial government departments, the private sector, ENGOs and academics. The report concluded that the Aboriginal capacity is the principal impediment to maximizing benefits from non-renewable resource development. One of the primary recommendations of the report was to consult Aboriginal peoples and to raise the profile of capacity-building issues and promote partnerships. The report also recommended that the Government of Canada allocate at least $500,000 a year for intervener funding for environmental effects assessment to ensure meaningful Aboriginal community participation in resource development decision making.

Precautionary Principal

The precautionary principle is a distinctive approach within science-based risk management and recognizes that the absence of full scientific certainty shall not be used as a reason to postpone decisions when faced with the threat of serous or irreversible harm. In 2000, the Government began work on a federal initiative to discuss the application of the precautionary approach/principle in science-based regulatory programs. In preparing for a federal framework for the consistent application of the precautionary principle, a multi departmental working group developed documents for consultation that propose guiding principles to support overall consistency. The government will engage stakeholders through various fora, including *via* the web, to solicit reaction to the proposed approach.

Canada Forest Accord

The second *Canada Forest Accord* is a formal commitment to continue working cooperatively to address the collective goal of sustainable forests, while using the *National Forest Strategy (1998-2003), Sustainable Forests: A Canadian Commitment* as a reference. The *Strategy* has nine strategic directions which address: forest ecosystems; forest management; public participation; forest industry, science and technology; communities and the workforce; Aboriginal peoples; private woodlots; and the global view. Signatory organizations to the *Accord* are members of the National Forest Strategy Coalition, comprising 49 Canadian government and non-government members and sponsored by the Canadian Council of Forest Ministers. These members, who hold a range of forest interests and values, exchange views and seek practical solutions to advance sustainable forest management.

3.11 CONCLUSION

In Canada, the role of the public participation in environmental management remains substantial and continues to grow. Many citizens are explicitly articulating their expectations for meaningful and timely involvement in issues that affect them. The issues, themselves, are rarely discrete and require coordination among many interests and jurisdictions, often beyond domestic borders, and strategies for involving the public are under review for their effectiveness and efficiency.

Public involvement is, however, resource intensive. It takes an investment in building the capacity of government and the public to maximize the benefits of the consultation process. Although the costs can be substantial, the costs of not involving the public in issues of interest and concern can be costly in terms of delays, a lack of public support for implementing the decisions or a loss of public confidence in government. Through feedback, Environment Canada is aware of the need for continually improving its capacity to engage the public and to the changing role it plays in promoting and participating in decision making.

Within Canada's democratic tradition, public participation continues to evolve. It is likely there will be a growing demand for using only the best "mix of tools" when involving the public in environmental management decisions and for demonstrating the value that the public brings to these decisions. Ultimately, the best indicator of successful public involvement will be the satisfaction that Canadians have with the state of the environment.

3.12 GLOSSARY

appreciative inquiry	a collaborative inquiry, based on interviews and affirmative questioning, to collect and celebrate the best of what a community is to construct a vision of what the community could be
citizen engagement	a two-way learning process between citizens and their democratically elected and public sector institutions in a search for common ground
civil society	segments of society organized in various ways and sectors, including but not limited to individuals, non-government organizations and other groups representing the interests of women, children and youth, indigenous people, local authorities, workers, farmers, business and commerce, and the scientific and technological community
consensus:	a level of agreement in which all those who have a stake in an issue agree on actions and outcomes to resolve or advance issues
ENGO	environmental non-government organization
issue table	multistakeholder group with a specific interest and/or expertise in an issue
multistakeholder	involving many interests, views, values or "stakes" in an issue or outcome
consultation	an interactive process that elicits and considers the values, information and advice of interested parties and individuals
voluntary sector	a sector of society including personal good deeds, organized unincorporated activity, mutual-help organizations, non-profit corporations without charitable status, charitable organizations, including charities, public and private foundations, universities, colleges, hospitals and museums

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What's New
Canada-Chile Agreement
Canada-Chile Commission
Cooperative Activities
Canadian Implementation
FAQs
Publications
Citizen Submissions

AGENDA FOR SEMINAR ON EFFECTIVE ENFORCEMENT POLICIES AND APPROACHES

September 29-30, 1999, Santiago Chile

The chief objective of this seminar was to exchange information on management and programs in Chile and Canada for effective environmental law enforcement, in order that the discussion might help improve enforcement of environmental standards and identify potential areas in which the two countries might in the future cooperate and collaborate.

The event took place under the 1999 Work Program of the Canada-Chile Commission for Environmental cooperation. Taking part in the seminar were senior officials from the environmental agencies of both countries, as well as experts and representatives of specialized agencies.

The seminar opened with a welcoming address delivered by Rodrigo Egaña B., Executive Director of Chile's National Environmental Commission (CONAMA). He stressed the importance and usefulness of the meeting in view of the similar environmental challenges facing both countries, despite their very different socio-economic circumstances and enforcement systems.

Next, Margot Edwards, Commercial Attaché at the Embassy of Canada to Chile and head of the Canadian delegation, noted the great value of such an exchange of ideas and experiences. She also expressed confidence in the Canada-Chile Commission for Environmental cooperation as a forum for identifying possible common ground to deepen Canada-Chile cooperation in the area of enforcing environmental standards.

Carlos Piña, head of CONAMA's International coordination Unit, then presented a brief overview of the Canada-Chile Agreement on Environmental cooperation and described the 1999 Work Program. He noted that the primary objective of this first meeting between Canadian and Chilean enforcement officers was to learn how environmental law is enforced in both countries, and what methods each uses for awareness raising and monitoring. On this topic, participants' questions and comments dealt mainly with the participation mechanisms stated in the Canada-Chile Agreement on Environmental Cooperation.

In Canada, responsibility for environmental enforcement - that is, developing legislation and promoting its implementation, inspections and investigations - is divided between the different levels of government in each part of the country, in accordance with the geopolitical structure of an area as it is defined in federal law. Environmental law enforcement is coordinated by such federal organizations as the departments of Fisheries and Oceans, Customs and Excise, Agriculture, Transport, and Justice; with these bodies, yearly action plans are prepared to enforce implementation of all standards

within a four- to five-year period.

Environment Canada has set priorities and adopted uniform inspection plans for all of Canada so that each region will prepare and deliver information in a constant and consistent fashion. Joint action is on the increase, sustained by training and by information sharing, joint operations, yearly meetings, etc. Personnel training programs have been upgraded to ensure that staff have a shared base of technical expertise and to provide the tools needed for action by various officers. There are also particular groups, such as wildlife inspectors (plants and animals), who are law enforcement officers and carry firearms. The different provinces' legislation is thus harmonized to facilitate coordination.

To succeed in implementing laws, and to lower the costs of doing so and of legal action, Canada has decided to enhance promotion and strengthen enforcement of laws by using such methods as publicizing laws and standards via new technology. Canada's experience has shown the value of a joint, integrated approach by various groups of officials in carrying out activities for promoting and enforcing laws, in order to achieve consistent, effective implementation of environmental legislation. Visits by inspectors of the different levels of government are coordinated so that all standards to be followed are jointly enforced in one step. Unscheduled inspections also take place when suspicions are conveyed or when complaints are submitted.

Canada also has voluntary programs for reducing harmful releases. The industries concerned monitor releases themselves and, with periodic revisions by enforcement and law officers, a National Pollutant Release Inventory has been drawn up; among other things, this helps in defining certain standards.

The public sector is monitored as well, and the fines levied help defray the costs of environmental action (especially training) in the very areas concerned. A national system has been set up for managing environmental information (the National Enforcement Management Information System and Intelligence System, or NEMISIS); this soon will make it possible to analyse information received from the various law enforcement agencies and to set priorities among the activities to be carried out.

Along with this, each year a report is issued on implementation of environmental laws in Canada. Information collected by the Government of Canada on companies and their subsidiaries is available for consultation, and citizens may have access to it provided that the data are not pertinent to a legal action before the courts.

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal calls for ensuring proper processing of hazardous waste and recyclable products, and for dissemination of information on this subject. Canada is independently adopting its own domestic laws drafted to ensure effective compliance with the Convention.

Canada has introduced a harmonized coding system for shipping, inspection and transfer documents used in international transport for authorized loads and vehicles; and when necessary it has launched legal action. In addition, with the United States, Canada has signed the bilateral Agreement Concerning the Trans-Boundary Movement of Hazardous Wastes.

As explained during the seminar, it was only recently that Chile made environmental law enforcement management and coordination a general

activity, and many institutions are involved in it, depending on the type of natural resources or environment concerned.

Since independence, Chile has passed laws on industrial effluents and forestry resources; more recently, the 1980 Constitution established the right to live in a pollution-free environment. The year 1992 saw adoption of Act 19.300 on the General Bases of the Environment. The Act created the National Environmental Commission and gave it a mandate to coordinate all public activities in environmental management, without changing existing governmental structures; it thereby entrusted environmental law enforcement to the different institutions that historically had performed this role. The challenge now is to achieve integrated coordination of the different environmental law enforcement agencies in order to carry out joint activities, and thus to lower costs and broaden the scope of application of the law. CONAMA is actively present as an agency for coordinating environmental management in Chile: its offices throughout the country are responsible for enforcing standards, working in cooperation with the Environmental Impact Assessment Board (SEIA). One of the most important components of the Environment Act is public participation: the government's objective is to achieve environmental management that is transparent and in line with its policy of sustainable economic development.

With regard to environmental law enforcement for forestry resources (forests cover 20.8 percent of Chile's area), the National Forestry Corporation (CONAF) is the institution responsible for managing the government's National System of Protected Areas and for monitoring forestry activities throughout the country. In principle, the law focusses on the protection of forests and their proper use. It has thus stimulated the preservation and creation of protected areas. A national law enforcement strategy has been developed in this field. To improve and strengthen the strategy, a system has been launched, coordinated by CONAMA; this links together the traditional activities of inspection and levying of fines, public awareness and participation, and provision of information to local communities.

Concerning freshwater, the Water Branch (DGA) - a division of the Ministry of Public Works - explains that differences in geographic features throughout Chile affect in various ways the progress made by regions in this area. The DGA freely grants watercourse rights to whoever applies for them. The government itself monitors and controls watercourse levels and flows, water withdrawals and flooding. Withdrawals are made by DGA-certified water users' organizations; should illegal withdrawals occur, the organizations inform the Branch, which may take legal action as required. The updated legislation has, however, made it possible to levy fines without taking the matter to court. Last, the private sector is responsible for water distribution and treatment.

Since the early 1990s the Office of the Superintendent of Health Services has played a leading part in controlling water quality. Legislation bans direct release of untreated liquid waste into sewage systems. In practice, however, enforcement of the law has been slow and the first fines were imposed only quite recently. One of the obstacles to enforcing the legislation is the lack of an independent laboratory that could analyse water samples and provide reliable results.

The National Fisheries Service (SERNAPESCA) is involved in monitoring the three marine protected areas, in environmental emergencies (particularly spills of liquid hydrocarbons, fuels or other toxic substances) and in applying the Convention on International Trade in Endangered

Species of Wild Fauna and Flora (CITES).

Depending on the particular case, one or another institution can authorize activities complying with the required conditions; and that institution participates, under the Environmental Impact Assessment System, in the Monitoring Committee organized by CONAMA, along with the different agencies for enforcement and inspection of current projects that have previously undergone impact assessment and received approval. The agencies that grant authorizations have somewhat limited means for monitoring because they lack the appropriate facilities (i.e., laboratories); in this respect, the legislation should be updated.

Among other enforcement bodies is the Chilean Army's Maritime Territory Branch (DIRECTEMAR). The Branch enforces laws and standards within territorial limits on ocean waters, plants and animals. It also controls coastal maritime activities, giving attention primarily to areas of major industrial development. Further, DIRECTEMAR carries out information and education programs with the aim of strengthening compliance with standards.

One of the most outstanding innovations in environmental management introduced by Act 19.300 with regard to prevention of environmental damage is the creation of the Environmental Impact Assessment Board, which seeks to ensure that investment projects are environmentally sustainable.

Moreover, the Act created a single window for developers, making it easier for them to obtain all the permits required from the various government institutions once the project is submitted for impact assessment. The SEIA then issues an Environmental Quality Resolution and sets conditions for launching the project so that it will be sustainable; alternatively, it may reject the project if it is too incompatible with the conditions required for compliance. When a project is under study, a period is provided during which the community that would be affected may express its concerns about the project's effects on its quality of life, through a process of public participation that is part of SEIA's responsibilities. Projects are monitored in accordance with priorities established on the basis of the following criteria: date of launch of the project; environmental complexity; public concern; date of last inspection; sensitivity of the place where the project is situated; type of release generated; and respect for historic structures. Agencies with monitoring powers carry out joint inspections, prepare reports using a standardized format, ensure that the required standards and conditions are met by each project, and impose penalties. The system is in operation throughout Chile.

Of the work performed by CONAMA's Metropolitan Area office, one activity that has drawn particular public attention is the implementation of the Air Pollution Prevention and Clean-Up Plan, a pioneering initiative in Chile. It is piloted by the Intendencia, the highest regional authority, with the participation of all ministries and agencies acting on environmental issues. So that the various players involved may carry out their commitments, systematic publicity and promotion are being undertaken for regulatory implementation and enforcement; further, penalties are imposed when necessary. All this is being done in accordance with the mandates of the different enforcement agencies, and CONAMA meets with them each month to decide on and modify ways of further carrying out the Plan. Experience shows that the commitments required from developers must be accompanied by tax benefits for carrying out those commitments.

Public-sector enforcement has been a major challenge in this initiative

because in Chile no penalty can be imposed on public agencies that do not comply with pollution clean-up plans, and their actions on air quality also cannot be controlled.

Despite everything, in July 1999, of 130 measures called for in the Plan, 76 percent had been carried out on schedule; 17 percent were under way and only 7 percent were behind schedule or not begun. A potential method for better promoting future execution of the Plan would be to publicize the degree to which each participating agency has implemented measures called for under the Plan.

Of the various actions called for, those most widely adopted throughout the country are monitoring of air quality, regulations, and inspection of confirmed sources of pollutant emissions; these have contributed significantly to the lowering of pollution levels.

However, a major challenge that is also a focus of effort is inspection of mobile emissions sources.

Creation of a nationwide qualification process for inspection, statistical sampling and data analysis is one of the crucial issues facing the Plan and the country as a whole, in order to achieve proper public environmental management.

In Region 5 (Valparaiso), CONAMA has coordinated its activities with other agencies, and their experience indicates that the work must lead to development of a participatory network, having good communication between the partners sharing the responsibilities. Accordingly, CONAMA and its partners have created a committee that meets periodically to discuss the Region's environmental problems and to coordinate implementation of inspection activities. It is essential to monitor compliance with standards and implementation of environmental solutions so that various inspection actions are harmonized, with the objective of lowering costs and enhancing efficiency. Also favoured by the committee are voluntary agreements to cut emissions and solve already existing pollution problems.

In Region 10 (Lakes), most inspection activities originate from citizen complaints. Those received by CONAMA are directed to the agency with authority in that area; and when several agencies are involved, CONAMA coordinates their work, since there are areas where more than one agency may be called on to undertake monitoring.

After conducting performance of inspections on the field, the resulting reports must be signed by all agencies concerned. In general, after an inspection, problems are solved by a joint agreement between the inspection agency, the violator and the community. Another possibility is to impose fines on the violator. On some occasions, industries have approached CONAMA directly to seek solutions to their environmental problems; and most recently, the various agencies involved have started to coordinate their work. Also subject to inspection are projects that have been submitted to the SEIA for approval. The agencies together prepare and plan the inspections according to a schedule determined by the level of the project's environmental risk. In this way, before the first visit, the inspection parameters are set. Next is the preparation of a report; if necessary, this presents actions to be taken to solve the problems observed and others likely to develop later on.

Last, it is a reality that prevention remains preferable and less costly than frequent inspections or possible rehabilitation.

Standards continue to be created and updated, and public awareness is growing. Now, however, Chile must use the means it has to inspect activities affecting the environment and to ensure compliance with standards. As a result of the system adopted by Chile, the coordination work performed by CONAMA (along with institutions empowered to do monitoring and inspection) is very important.

Chilean National Secretariat

Français
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Cooperative Activities | Canadian Implementation | FAQs | Publications

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Workshop on Public Participation in the Environmental Decision-Making Process in Chile and Canada
October 3 & 4, 2000, Santiago

A workshop on "Public Participation in the Environmental Decision-Making Process in Chile and Canada" was held in Santiago de Chile, on October 3 and 4, 2000, under the auspices of the Joint Public Advisory Committee created by the Canada-Chile Agreement on Environmental Cooperation. Four major themes were covered during the event:

- Public Participation in Environmental Management;
- Strengthening Civil Society for Environmental Management;
- The Role of Civil Society in Monitoring, Assessment and Oversight of Environmental Regulations and Policies; and
- Public Participation and Environmental Disputes.

These subjects were discussed by knowledgable professionals from the public and private sector, at an event attended by an audience of over sixty people representing government, non-governmental organizations, universities and other institutions. The activity was divided into presentations and group work in workshops, during which there were intense discussions of the different subjects covered. A list of the presentations follows:

1. Public Participation in Environmental Management

1.1 "Public Participation in the Drafting of Environmental Regulations and Voluntary Initiatives," *Bruce McEwen, Environment Canada*
1.2 "Public Participation in Environmental Management: Policy Orientations," *Marisa Weinstein, CONAMA - National Environmental Commission*

2. Strengthening Civil Society for Environmental Management

2.1 "Weakening of Public Participation in a Fragmented Society," *Juan Pablo Orrego, Group of Friends of the Bío Bío*
2.2 "Public Policy and Civil Society," *María Eliana Arntz, Division of Social Organizations*
2.3 "Challenges in Encouraging Potential Contributions from Civil Society," *Beatrice Olivastri, Friends of the Earth*

3. The Role of Civil Society in Monitoring, Assessment and Oversight of Environmental Regulations and Policies

3.1 "Civil Society and Environmental Policy: Current Problems and Challenges," *Sara Larraín, Sustainable Chile*
3.2 "Three Canadian Models for Public Participation in Environmental Impact Assessment," *Rod Northey, Birchall Northey*

4. Public Participation and Environmental Disputes

4.1 "Environmental Disputes as Incentives for Participation," *Francisco Sabatini, Pontifical Catholic University of Chile*
4.2 "Environmental Decision Management: A Participatory Approach," *Gord Rozon, AMEC Earth & Environment*

4.3 "Participation and Dialogue: A Chance for Timely Resolution," *Javiera Prieto, CONAMA - National Environmental Commission*

Full text of the presentations in Spanish (link)

At the end of the Seminar, the following conclusions were presented:

1. Public participation should be part of the State management model and public policies; it should be included in the various levels and phases of decision-making.

2. Public participation should be based upon:
   a) Transparent management which generates support from the public.
   b) Public knowledge and concerns, which improve the quality of environmental management.
   c) Sustainability of environmental decisions.
   d) More transparent management minimizes the political component (discretional or arbitrary) of environmental decisions.

3. Public participation should be present in the design, execution and evaluation of environmental management and policy tools.

4. Civil society has different levels of groups (various kinds of citizen organizations, individuals, etc.) that characterize it and ensure its autonomy from the State and the fact that it is not for profit. Civil society today occupies the lowest position in the State-market-citizenry triangle.

5. The discussion groups generated various proposals to strengthen public participation.

   The first set of proposals is related to government policies and programmes for public participation:

   a) Generate an effective policy for public participation at the State level. Identify and develop different mechanisms and methods for public participation at the various phases of decision-making.
   b) Improve technical capacity for public participation by strengthening public knowledge.
   c) The authorities should give timely, constant information throughout the decision-making process.
   d) Provide technical and financial resources for participatory processes.
   e) Provide public funding to communities affected by a project to contract technical, legal and training resources.
   f) Promote and undertake early participation processes.

   The second set of proposals to strengthen public participation deals with the linkages between actors:
   a) Generate mechanisms to create trust among the different actors.
   b) Generate trust between the State, the public and businesses.
   c) Generate a culture of participation.

d) Generate public indicators in projects of the environmental impact assessment system.
e) Generate ways and spaces to exchange experiences, for example through disclosure or essentially through information dissemination.

A third group of proposals to strengthen citizen participation refers to strengthening civil society:

a) The State should generate mechanisms to support social organizations, legal and financing mechanisms and mechanisms for transfers and power.
b) The Government should contribute to generating participatory values.
c) Civil society itself should generate instruments and resources independently to become stronger.

Summary Report of NEMISIS Workshop

On August 23 2001, the Work Program of the Chile- Canada Agreement on Environmental Cooperation hosted a workshop on "Canada's National Enforcement Management Information System and Intelligence System (NEMISIS) and the Possibility of Implementation in Chile".

The event took place under the 2001 Work Program of the Canada-Chile Commission for Environmental cooperation. The seminar was attended by senior officials from the environmental agencies of both countries, as well as experts and representatives of specialized agencies

The workshop was hosted by Adriana Hoffman, Executive Director of the Chilean National Commission of the Environment, in her capacity as a member of the Counsel of the Commission for the Chile-Canada Agreement on Environmental Cooperation. Canada's delegation was headed by Randy Harwood, a Commercial Attaché with the Canadian Embassy to Chile.

During this seminar Environment Canada made a presentation of a national system for managing environmental information (the National Enforcement Management Information System and Intelligence System, or NEMISIS); this system will make it possible to analyse information received from the various law enforcement agencies and to set priorities among the activities to be carried out.

NEMISIS provoked enormous interest from Chile, and prompted an initiative for Environment Canada and Chile's National Commission for the Environment (CONAMA) to work together to implement a similar initiative in Chile using this software. Once in place this system will contribute to national environmental enforcement, improve efficiency in obtaining strategic information, and optimize the use of the public and human resources.

At the workshop CONAMA made a commitment to design a National Environmental Information System.

What's New
Canada-Chile Agreement
Canada-Chile Commission
Cooperative Activities
Canadian Implementation
FAQs
Publications
Citizen Submissions

ENVIRONMENTAL MANAGEMENT IN CHILE - REPORT
November 1996

FOREWORD

The Agreement on Environmental Cooperation between the Government of Canada and the Government of the Republic of Chile was negotiated as a parallel accord to the Canada-Chile Free Trade Agreement. In preparing for the negotiation of the environmental agreement, the Government of Canada assessed the state of environmental management in Chile.

This document provides a description of environmental management in Chile based on that assessment. It is organized in four parts. Chapter one is an overview of the organization of the Chilean state. Chapter two outlines the key element of the institutional system that administers Chile's environmental laws and policies. Chapter three describes key environmental management tools. The managment of selected environmental issues related to mining, forestry, wildlife, and the use of pesticides is found in chapter four, followed by conclusions in the final chapter. Appendix A lists the key Chilean laws that pertain to the environment and provides details on some aspects of these laws.

The document is based on research carried out by Townsend Trade Strategies and interviews conducted by Canada's negotiating team and the Canadian Embassy in Santiago, Chile. It was edited by Susan Ecclestone, Environment Canada. The Government of Canada is indebted to Chile's National Commission on the Environment (CONAMA), and the Chilean negotiating team, in particular Carlos Piña, Leonel Sierralta, Jaime Undurraga, Ricardo Katz, Andrea Butelmann and Paula Troncoso whose expertise proved invaluable and who gave generously of their time. The assistance of Goldie Schermann, Louise Côté, Anne Daniel, Denis Langlois and Andy Bowcott in preparing this document is also gratefully acknowledged.

TABLE OF CONTENTS

- 1. Overview of Organization of the Republic of Chile
  - 1.1 Judicial System
  - 1.2 Government Ministries
  - 1.3 Regional Governments
  - 1.4 Municipal Governments
- 2. Key Players in Environmental Protection
  - 2.1 National Environmental Commission - CONAMA
  - 2.2 Government Ministries
  - 2.3 Regional and Municipal Governments
  - 2.4 Public Participation
- 3. Key Environmental Management Tools
  - 3.1 Environmental Standards and Regulations
  - 3.2 Management, Prevention and Decontamination Plans
  - 3.3 Environmental Impact Assessment System
  - 3.4 Education Programs
- 4. Selected Environmental Issues
  - 4.1 Mining

- 4.2 Forestry
- 4.3 Wildlife
- 4.4 Pesticides

- **5. Conclusion**
- **Appendix A: Description of Key Chilean Laws Pertaining to the Environment**
- **Bibliography**

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What's New
Canada-Chile Agreement
Canada-Chile Commission
Cooperative Activities
Canadian Implementation
FAQs
Publications
Citizen Submissions

Table of Content

ENVIRONMENTAL MANAGEMENT IN CHILE - REPORT
November 1996

PART I

1. OVERVIEW OF THE ORGANIZATION OF THE REPUBLIC OF CHILE

Chile is organized administratively as a unitary system. It is governed centrally by the President of the Republic who is elected at six year intervals. Ministers of State are appointed by the President. The elected parliament, located in *Valparaíso*, has two components: the Chamber of Deputies and the Senate. Both the Senators and the Deputies serve eight year terms. They are responsible for studying, modifying and approving all laws which originate from the President or the ministries. Environmental matters are considered by both the Senate Environment Committee and the Deputies' Natural Resources Committee.

1.1 Judicial System

The legal system in Chile is based on the Napoleonic code. Chile is a legalist country which means that all compulsory regulations are established through written juridical norms. All laws and regulations are subordinated to the Constitution. The law is applied uniformly in all parts of the country. No regional organization can modify, interpret, or regulate current legislation or apply conditions to its application.

Legislation can be introduced by the Deputies or Senators; however, it must receive Presidential approval before it is submitted to the Congress. International treaties are first signed by the President and then submitted to the Congress for approval. Once treaties are approved by the Congress, they become part of Chilean law and may then be ratified by the President.

The highest authority of the judicial branch is the Supreme Court which is based in Santiago. The Supreme Court, the lower level courts and the appeal courts in various parts of the country, are responsible for the application of Chilean law.

The Constitution of the Republic of Chile establishes the framework for laws related to the environment. The Constitution, as it pertains to the environment, stipulates that all persons have the right to live in a pollution free environment and that the state is responsible for ensuring this right. According to the Constitution, the state is responsible for environmental protection.

A hierarchy of laws and enabling legislation govern environmental issues in Chile. In order of importance and priority they are:

- *Constitución de la Republica de Chile*, the Constitution of the Republic of Chile - the Constitution takes precedence over the interpretation of all other laws, decrees and resolutions. All changes to the Constitution require approval by 75 percent of the Congress, including the Chamber of Deputies and the Senate;
- *Ley Orgánica de* ..., General Law of ... - there are eight general laws which are the fundamental laws that address the organization of the Chilean state. All changes to the General Laws require approval by 75 percent of the

Congress, including the Chamber of Deputies and the Senate. An example is the *Ley Orgánica de Municipalidades*;

- *Código de* ..., Code of ... - a Code is a systematic set of laws focused on one area. New codes and all changes must be approved by 50 percent plus one vote within the Congress. The Water Code *(Código de Aguas)* is one example;
- *Ley de* ..., Law of ... - laws are introduced with the approval of 50 percent plus one vote within the Congress. Processes, regulations and standards that describe the application of the law are introduced over time in the form of decrees and resolutions;
- *Decreto Supremo*, Supreme Decree - a Supreme Decree is signed by the President of the Republic or a minister on behalf of the President. It is issued in accordance with a law previously approved by the Congress. It is an instrument to describe one or many aspects of how a law will function. It takes effect and has the power of the law upon publication in the *Diario Oficial* (Official Gazette), the daily congressional report similar to the Canada Gazette;
- *Decreto Reglamentario o Reglamento*, Regulatory Decree or Regulation - the purpose of the regulatory decree or regulation is similar to the Supreme Decree but it is issued under the signature of a minister acting under his/her power as minister and without reference to the President of the Republic;
- *Decreto Simple* or *Decreto Individual*, Simple Decree or Individual Decree - these refer to an individual decree or a particular situation (for example, nomination of a senior civil servant): and,
- *Resolución o Instrucciones Administrativas*, Resolution or Administrative Instructions - the purpose of a resolution is to further define a process, regulation or standard pursuant to a decree and a law. Resolutions can be issued by a director of a ministerial service.

1.2 Government Ministries

The President, currently Eduardo Frei Ruiz-Tagle, appoints the Ministers of State and the senior public service directors. There are eighteen ministries and two additional administrative offices which have ministerial status (See Table 1.1).

TABLE 1.1 LIST OF GOVERNMENT MINISTRIES

Government Ministry	Minister (November 1996)	Translation
Ministerio de Agricultura	Carlos Mladinic	Ministry of Agriculture
Ministerio de Bienes Nacionales	Adriana Delpiano Puelma	Ministry of Public Lands
Ministerio de Defensa Nacional	Edmundo Perez Yoma	Ministry of National Defense
Ministerio de Economía, Fomento y Reconstrucción	Alvaro García Hurtado	Ministry of the Economy, Economic Development and Reconstruction
Ministerio de Educación Pública	José Pablo Arellano	Ministry of Education
Ministerio de Hacienda	Eduardo Aninat Ureta	Ministry of Finance
Ministerio del Interior	Carlos Figueroa Serrano	Ministry of the Interior
Ministerio de Justicia	María Soledad Alvear Valenzuela	Ministry of Justice
Ministerio de Minería	Benjamin Teplizky	Ministry of Mining

	Lijavetzky	
Ministerio de Obras Públicas	Ricardo Lagos Escobar	Ministry of Public Works
Ministerio de Planificación y Cooperacion (MIDEPLAN)	Roberto Pizarro	Ministry of Planning and Cooperation
Ministerio de Relaciones Exteriores	Jose Miguel Insulza Salinas	Ministry of Foreign Affairs
Ministerio de Salud Publica	Alex Figueroa	Ministry of Health
Ministerio Secretaría General de la Presidencia	Juan Villarzú	Ministry Secretary General of the Presidency
Ministerio Secretaría General de Gobierno .	Jose Joaquin Brunner R	Ministry of the Presidency, Office of the Minister Secretary General of Government
Ministerio del Trabajo y Previsión Social	Jorge Arrate MacNiven	Ministry of Labour and Social Welfare
Ministerio de Transportes y Telecomunicaciones	Claudio Hohmann	Ministry of Transportation and Telecommunications
Ministerio de Vivienda y Urbanismo (MINVU)	Edmundo Hermosilla Hermosilla	Ministry of Housing and Urban Development

Additional Administrations with Ministerial Status		
Ministro Vicepresidente de Corporación de Fomento de la Producción (CORFO)	Felipe Sandoval	Ministry of the Vice-president of the Corporation for Development of Production (CORFO)
Ministro Vicepresidente de la Comisión Nacional de Energía	Alejandro Jadresic	Ministry of the Vice-president of the National Commission of Energy

1.3 Regional Governments

The population of Chile was 14 million in 1994 (based on 1993 census projections). The country is divided into thirteen regions, the first in the extreme north and the twelfth in the extreme south. The thirteenth region is the Metropolitan area of Santiago. Santiago is the most populous city in the country with 4.5 million people (See Table 1.2). Most Chileans live in the central regions, primarily due to favourable climatic conditions.

TABLE 1.2 REGIONS IN CHILE

Region	**Name of Region**
Región I	Región de Tarapaca
Región II	Región de Antofagasta
Región III	Región de Atacama
Región IV	Región de Coquimbo
Región V	Región del Valparaíso
Región VI	Región del Libertador General Bernardo O'Higgins
Región VII	Región del Maule
Región VIII	Región del BioBío
Región IX	Región de la Araucanía
Región XI	Región Aisen del General Carlos Ibanez del Campo
Región XII	Región de Magallanes y de la Antartica Chilena
Región XIII	Región Metropolitana

The "north" is comprised of Regions I, II and III. It is characterized by an extremely arid climate, making human settlement difficult. The small population of these regions together makes up only 7.3 percent of the total population. The "south" is comprised of Regions XI and XII, comprising only 1.7 percent of Chile's population. This area is characterized by high rainfall and low temperatures. The central zone, including the area between Regions IV and X, offers more favourable conditions for human settlement and accounts for 91 percent of the Chilean population. Within this zone, the most concentrated areas are Región del Valparaíso, Región del BioBío, and the Región Metropolitana.

Each region has its own government which is subordinate to the central government in all respects. The highest authority in the regions is the *Intendente*, who is the equivalent of a regional governor. The *Intendente* is nominated by the President of the Republic and acts as the President's direct agent in the region. The regions are subdivided into provinces, normally with three to five provinces in each region. The provinces are further subdivided into townships or municipalities called *comunas*. Each province has a provincial governor, appointed by the President of the Republic, who works administratively under the *Intendente* of the region.

The *Intendentes* preside over regional councils that include provincial governors, regional ministerial secretaries (SEREMIs) (which include, for example, regional directors of the Ministries of Mining and Health), regional directors of public services and representatives of the public and private sectors. The regional representatives on the SEREMIs are nominated by the *Intendente* to act as representatives of the ministers.

1.4 Municipal Governments

Municipalities, within the provinces, are established under the *Ley Orgánica de Municipalidades*, the General Law for Municipalities (Law No. 18,695). They are headed by a mayor and a council, elected by popular vote every four years.

By virtue of the *Ley Orgánica de Municipalidades*, towns and municipalities operate independently of central government and they establish their own by-laws. Because some municipal funding comes from the central government, the municipalities must abide by the fiscal controls established by the *Contraloría General de la República*, the Comptroller of the Republic.

Next | Index

Chilean National Secretariat

Français
Site Map | Home | Contact Us | Search
What's New | Canada-Chile Agreement | Canada-Chile Commission
Cooperative Activities | Canadian Implementation | FAQs | Publications

Green Lane Home | Contact Green Lane | Search the Green Lane | Canada Site

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What's New
Canada-Chile Agreement
Canada-Chile Commission
Cooperative Activities
Canadian Implementation
FAQs
Publications
Citizen Submissions

Table of Content

ENVIRONMENTAL MANAGEMENT IN CHILE - REPORT
November 1996

PART II

2. KEY PLAYERS IN ENVIRONMENTAL PROTECTION

The following section describes the role of four key players in environment protection in Chile: the National Environmental Commission; government ministries; regional and municipal governments; and the public.

For decades, the government in Chile has addressed environmental issues in a decentralized fashion. Several ministries and their agencies are responsible for various facets of environmental protection in accordance with hundreds of environmental laws and regulations. Recently, through the establishment of Chile's National Environmental Commission, *Comisión Nacional del Medio Ambiente* (CONAMA), in 1990 and the entry into force of the Environmental Framework Law in 1994, Chile has begun to move toward a more comprehensive, coherent and coordinated program of environmental management.

The Environmental Framework Law -La Ley de Bases del Medio Ambiente

In March 1994, the Environmental Framework Law came into force establishing the first comprehensive law for managing environmental issues in Chile. It arose from the need to standardize, control, and supervise the administration of more than 700 regulatory texts and norms, some of them overlapping. Many of the laws on the books in Chile are not enforced. Many are outdated and have been superseded by new laws but have not been repealed. The Framework Law provides a basis for the organization of environmental regulations in Chile. It sets out basic principles of environmental management, including the importance of public participation and environmental education, calls for the coordinated development of environmental standards, and establishes a number of management instruments, such as the environmental impact assessment system and management, prevention and decontamination plans.

2.1 National Environmental Commission (CONAMA)

Established in 1990, CONAMA is a coordinating body with a mandate to guide and coordinate public sector administration of environmental issues. CONAMA falls within the jurisdiction of the Ministry of the Secretary General to the Presidency. It has its own budget.

CONAMA's responsibilities are defined in the Framework Law. Generally, they include implementation of the Framework Law, developing and implementing environmental policies and standards, overseeing the environmental impact assessment process, ensuring public participation, and promoting environmental education.

Specifically, CONAMA's responsibilities are to:

- propose governmental environmental policies to the President of the Republic;
- periodically inform the President on compliance with and application of current environmental legislation;
- act as an agency for consultation, analysis, communication and coordination of environmental matters;
- establish and maintain a national environmental public information system classified by Regions;
- administer the environmental impact assessment process at the national level;
- coordinate the process of generating environmental standards and programs to ensure compliance;
- collaborate with agencies with jurisdiction in the preparation, approval and development of educational programs and the dissemination of environmental information oriented to the creation of a national consciousness on the protection of the environment, the preservation of nature and the conservation of environmental heritage, and promote citizen participation in such matters;
- coordinate agencies with jurisdiction in matters linked to international assistance for environmental projects, in conjunction with the Agency for International Cooperation of the Ministry of Planning and Cooperation, as the national counterpart in environmental projects with international financing; and
- finance projects and activities oriented to the protection of the environment, the preservation of nature and the conservation of environmental heritage.

In 1995, CONAMA's priorities were to hire and train staff, establish the environmental impact assessment system, and develop the legal basis for the organization of CONAMA and its regional offices (through Supreme Decree No. 86) and the procedures for the development and revision of environmental standards (through Supreme Decree No. 93). Both Supreme Decrees No. 86 and 93 came into force in October 1995.

The priorities for 1996 include the review of existing environmental regulations and standards and formulating new standards in response to the directives in Supreme Decree No. 93, the establishment of the Advisory Councils within CONAMA's regional offices, and the definition of the skill requirements and training curriculum for CONAMA officials.

Structure of CONAMA

CONAMA is based in Santiago and has regional offices or Regional Environmental Commissions (COREMAs) in each of the thirteen Regions of Chile. CONAMA's institutional structure consists of the following:

- a ***Council of Ministers*** which serves as a Board of Directors. The Minister of the Secretary General of the Presidency is the chair of this Council. The Council consists of twelve Ministers including the Ministers of: Economy, Economic Development and Reconstruction; Public Works; Agriculture; Public Lands; Health; Mining; Housing and Urban Development; Transportation and Telecommunications; Planning and Cooperation; Defense; Education; and Foreign Affairs.
- an ***Executive Director*** who is appointed by the President of the Republic; and
- an ***Advisory Council*** which includes the chair of the Council of Ministers of CONAMA who also presides over the Advisory Council, and other representatives as specified in Supreme Decree No. 86, including the following appointees:

    - two scientists from a list of five proposed by the Chilean Universities Rectors Council
    - two representatives from environmental non-governmental organizations;
    - two representatives from independent academic centres

dedicated to researching environmental problems;
- two business sector representatives from a list of five proposed by the private sector;
- two labour union representatives from a list proposed by union organizations;
- one representative of the President of the Republic and in the case of the COREMA the regional *Intendente*.

Structure of the COREMAs

In all regions, CONAMA maintains a separate office called a COREMA. A Regional Director, appointed by the Executive Director of CONAMA, is responsible for managing this office. Each COREMA is staffed by at least two professionals with university backgrounds.

The COREMAs' function is to coordinate environmental management at the regional level and to encourage participation at the municipal level. These offices administer environmental programs funded by the State or by international sources. While CONAMA can advise a COREMA upon request and acts as the office of last resort when a dispute arises between two COREMAs, CONAMA cannot overrule a decision taken at the level of a COREMA.

The bodies within the COREMA include:

- a ***Regional Board***, which includes the Regional Director, the *Intendente* of the Region, the governors of the provinces located in the region, and four regional advisors elected by the board members;
- a ***Technical Committee*** comprised of the Regional Director of the COREMA, the Regional Director of the *Secretarías Regionales de los Ministerios* (SEREMIs) in the Region, the regional services of the Ministries of Agriculture; Mining; Economy, Economic Development and Reconstruction; Public Works; Planning and Cooperation; Health; Housing and Urban Development; and Transportation and Telecommunications. In some regions the services of the Ministries of Education, Defense and Foreign Affairs are also represented.
- a ***Regional Advisory Council*** which mirrors the structure of CONAMA's Advisory Council. The Regional Director of the COREMA presides over this Council which includes the following representatives appointed by the *Intendente*:

    - two scientists;
    - two representatives from ENGOs;
    - two representatives from the business sector;
    - two workers' representatives; and,
    - one representative from the office of the regional *intendente*.

2.2 Government Ministries

As a coordinating body, CONAMA works closely with the ministries. While CONAMA administers the process of environmental standards development, in which the ministries play an integral role, the ministries themselves are responsible for inspection, monitoring and enforcement of environmental regulations. There is generally a higher degree of cooperation between the CONAMA and the COREMAs' activities with the ministries in cases where the ministries have central and regional environmental units or departments dedicated solely to environmental matters.

A major challenge facing CONAMA and the ministries is to prepare and draft modern and relevant environmental regulations. They are also faced with the challenge of developing consistent and uniform procedures for evaluating, monitoring, and enforcing the application of these standards. CONAMA is working to strengthen the capacity of the ministries with respect to the environment by providing access to technical experts and advice on environmental matters.

The ministries that are more active on environmental issues are listed below and a brief discussion of their functions is provided.

Ministry of Agriculture - Ministerio de Agricultura

The Ministry of Agriculture is responsible for overseeing the management of renewable natural resources and for developing control and inspection methods to be carried out by the following organizations.

- *Servicio Agrícola y Ganadero* (SAG), the Agricultural and Livestock Service, regulates compliance with the legislation related to the conservation of natural resources, hunting, husbandry, and forestation. Occasionally, SAG monitors the quality of liquid effluent discharges from industrial plants to confirm compliance with the current standards as set out in the Water Code (*Código de Aguas*, 1980). However, the code contains no sanctions against violators. As a result, the SAG does not have the powers to enforce the standards that it monitors. Violations are reported to local courts at the municipal level and the judge decides whether action should be taken.
- *Corporación Nacional Forestal* (CONAF), the National Forest Corporation, is responsible for developing and managing forest resources. This includes responsibility for conservation, protection of ecological balance, and erosion control. CONAF administers the system of protected areas, including training, administration, and development of the national parks, forest reserves, state forests and other state forest units. As the single administrator of the *Sistema Nacional de Areas Silvestres Protegidas del Estado*, (SNASPE) the National System of State Protected Wild Areas, CONAF is responsible for the protection of wildlife in national parks. CONAF has the same functions as SAG in specific areas, such as: ensuring compliance with the legal and regulatory procedures covering the protection of soil and water resources, fauna and wild flora including monitoring and inspection; the planting and development of certain tree and bush species; forest fire prevention and control; and compliance with procedures preventing pollution that could affect natural resources, except in the area of seed development and health of flora and fauna, which remain the responsibility of SAG.
- *Departamento de Protección de Recursos Naturales* (DEPROREN), the Department for the Protection of Renewable Natural Resources, looks after the conservation, protection and development of renewable natural resources and the environment. DEPROREN establishes contamination limits for soil, water, and air. It also ensures compliance with standards.

Ministry of Education - Ministerio de Educación

This ministry incorporates topics related to ecology, environmental pollution, and protection of the environment into elementary and intermediate teaching programs. Various ministries contribute to the content of education programs according to their expertise. The country's university network is an important source of scientific and technical expertise for the ministries. Universities and technological institutes exist in most of the regions of the country and many participate in independent research on regional environmental issues or provide consulting services to municipalities and regional governments.

Ministry of Defense -Ministerio de Defensa

The following administrative arms of the Ministry of Defense have environmental responsibilities.

- *Dirección General de Territorio Marítimo* (DGTM), Territorial Maritime Authority and Merchant Marine, is under the control of the Chilean Navy which has the power to control pollution of the sea and correspondingly to monitor the discharge of liquid wastes in coastal waters.
- *Carabineros de Chile*, the police regulate compliance with a number of by-laws related to the environment, such as vehicle exhaust emissions stipulated by the Ministry of Transportation and Telecommunications and

contained in municipal ordinances.

Ministry of Health - Ministerio de Salud Pública

This ministry is one of the most important in terms of environmental protection. The ministry is responsible for safeguarding the constitutional mandate that assures every citizen the right to live in a pollution-free environment. It participates in the development of all environmental standards designed to protect human health (called primary standards according to the Framework Law). The ministry's priorities are drinking water, air, food, and occupational health.

Servicios de Salud Ambiental, the Health Service, plays an important role in monitoring mining and forestry activities. It conducts periodic visits to the operating facilities and verifies compliance with air quality standards.

Ministry of Housing and Urban Development - Ministerio de Vivienda y Urbanismo - MINVU

This ministry is charged with planning and regulation of land use in urban zones.

Ministry of Mines - Ministerio de Minería

Servicio Nacional de Geología y Minería, (SERNAGEOMIN) National Services of Geology and Mining, is the ministry's monitoring and enforcement agency for the mining sector. SERNAGEOMIN is concerned with the stability of the tailings deposits; the possibility of pollution from mine water filtration to the underground water table; and, the existence of safety and contingency plans for the mining sector in cases of emergency.

Ministry of Planning and Cooperation - Ministerio de Planificación y Cooperación - MIDEPLAN

MIDEPLAN is charged with coordinating all work and development plans and reviewing public investment priorities. It pays particular attention to analyzing the technical and economic viability of major projects related to drinking water supply, sewer services, and dams for the generation of energy and irrigation. No government project can advance without being approved by MIDEPLAN.

Ministry of Public Lands - Ministerio de Bienes Nacionales

The Ministry of Public Lands administers all of the public lands of the country.

Ministry of Public Works - Ministerio de Obras Públicas

This ministry's environmental issues are managed through two agencies:

- *Superintendencia de Servicios Sanitarios* (Ex-SENDOS), the Superintendent of Sanitary Services, that was created under Law 18.902 by the Ministry of the Economy, Economic Growth and Reconstruction. It inspects companies to ensure compliance with industrial liquid discharge procedures.
- *Dirección General de Aguas* (DGA), the Central Water Authority, which maintains data banks on water quality in natural waterways and possible degradation of the latter due to overuse. It prepares statistics on the quality of water in the main drainage basins and ensures compliance with the *Código de Aguas*, Water Code. Occasionally the *Dirección General de Aguas* (DGA) checks the quality of liquid effluent discharges from industrial plants to confirm compliance with the current standards as set out in the Water Code.

2.3 Regional and Municipal Governments

The mandate of the *Intendente*, who chairs the activities of the COREMA and has significant influence on the decisions to support the environmental mandate, is to ensure that environmental protection is compatible with regional economic and social development.

Municipalities play a key role in environmental protection. They can require that special measures be taken by industries in their jurisdiction. Municipalities are also involved in the process for approval of construction and development permits, including for example: housing construction, development of landfills, and the use of gardens and public spaces.

A few municipalities have created environmental health departments within their administrations to deal with such issues. Many municipalities have a *consejo ecológico comunal*, a volunteer community council.

It is the policy of CONAMA, through the COREMAs, to invite the municipalities to play an active role in the environmental impact assessment system, particularly in facilitating citizen participation. Formal mechanisms for municipal participation have yet to be established.

2.4 Public Participation

The Framework Law establishes that the state, through CONAMA and the COREMAs, is responsible for encouraging public participation in the area of environmental protection. Public participation, defined as '...the informed participation of the organized community...[1], is facilitated by CONAMA at three levels.

- Formulation of environmental standards, plans, and regulations. As of March 1996, norms and regulations being contemplated for review or inception in a given fiscal year can be reviewed by any interested citizen or corporate entity prior to government action being taken. (See section 3.1)
- Participation in the environmental impact assessment system. (See section 3.3)
- Reporting of violations of environmental laws.

Non-governmental Organizations (NGOs)

A variety of Non-governmental Organizations (NGOs) play important roles in raising the profile of environmental issues in Chile. These organizations are diverse in their ideological, in the environmental issues and geographic areas that they address. Chilean NGOs can be divided into two broad groups: Environmental NGOs (ENGOs) and community organizations, although the distinction is not always obvious.

ENGOs in Chile operate in much the same way as their North American counterparts. There are a handful of professional ENGOs with strong technical expertise which may be either national or regional in nature. Some ENGOs are affiliated with international ENGOs (e.g., Greenpeace) and some play an active role lobbying in international environmental fora.

While ENGOs are active in Chile, Chile's environmental movement is largely rooted in community organizations. Community organizations run the gamut from reasonably well-organized institutions to single issue groups. By and large, community organizations tend to have limited resources and rely mainly on volunteers. Some are led by people who have considerable experience at the grass roots level while others may be unfamilar with the appropriate process to affect change. Their leaders may have little formal education, but may have access to experts; people in the community who have degrees in veterinary medicine, biology, engineering, forestry, etc.

The issues facing community organizations tend to be related directly to health and quality of life (i.e., garbage disposal, water quality, pesticide management and air quality). Some are organized to fight against specific development projects or to

protect nature reserves, national parklands or wetlands. A community organization may begin on an *ad hoc* basis by trying to resolve a specific problem in a community, such as garbage disposal. Typically, if the group is effective in addressing one issue it will broaden its scope.

Some of the more active ENGOs in Chile include:

- RENACE *(Red Nacional de Acción Ecológica)* - Chile's National Network for Ecological Action was established in 1988. It has a membership of about 145 organizations with representation from all regions of Chile and including most ENGOs, many community organizations and many of the municipal volunteer community councils. The main function of RENACE is to assist members in promoting ecologically sustainable community development. The group is dedicated to promoting public awareness of environmental issues. RENACE provides a valuable information and networking resource to smaller organizations, who may lack information about political processes and who require assistance to mount an effective lobby. The group publishes a periodical aimed mainly at reporting environmental abuses.
- *Comité de Defensa de la Flora y Fauna* (CODEFF), the Committee for the Defense of Flora and Fauna - CODEFF is a non-profit organization that has been operating in Chile for over 28 years. It is a national organization with eight regional offices throughout Chile. CODEFF is managed by a 20 person board elected by a membership of 3,500. Its work, supported by independent scientific groups, focuses on three main areas: applied research for the preparation of position papers; environmental education and information dissemination; and lobbying. It is organized on a program and project basis (e.g., forestry, biodiversity, environmental education). Approximately 80% of CODEFF's funding originates outside the country and is channeled, to Chile by other NGOs such as the World Wildlife Fund. The organization has also signed some sponsorship agreements with companies, including VISA.
- *Centro de Investigación y Planificación del Medio Ambiente* (CIPMA), the Centre for Environmental Research and Planning - founded in 1979, this institution has been at the forefront of the environmental debate in Chile since 1983 when the first environmental conference took place in *La Serena*, in Region IV. CIPMA publishes the magazine *Ambiente y Desarrollo* and *Alerta Ambiental* every two months with sections on environmental impact issues, experiences and solutions to environmental problems, environmental policies, and regional issues. These publications are of particular technical and scientific interest in Chile.

CIPMA also provides a data-bank and specialized library services. Recently, it was nominated as the Chilean representative for the project EP 3, the Environmental Pollution and Prevention Project, financed by US AID, the US EPA and the Water Environmental Federation (WEF). CIPMA has edited and published numerous books on environmental policies and technologies and at the present time, it is an important point of reference for government, universities, industry, and the public.

- *Centro de Estudios Públicos* (CEP), *the Centre for Public Studies* - This is an important and independent organization that is well respected by the private sector for the quality of its publications.
- *Casa de la Paz,* House of Peace - This organization focuses on promoting public participation in the development of environmental policies and in the prevention of environmental abuses. Recently, it published a handbook on citizen participation in the environmental impact assessment process with the support of U.S. AID and the World Resources Institute. This ENGO garners considerable public support and is noted for effectiveness in communication.

ENGOs and CONAMA

The Government of Chile has recognized the important role of ENGOs in environmental protection and has assigned them the same importance as industry representatives within the Advisory Councils of CONAMA and the COREMAs. The government selects two ENGO nominees for each Advisory Council of CONAMA and the COREMAs from resumes submitted by ENGOs. Meetings of the Advisory Concils of CONAMA or the COREMAs may be called with 24 hours notice. They are

supposed to be held monthly, but this is not always the case. There tends to be more regularity at the national than the regional levels. ENGOS have expressed concern that they are not always able to play an effective role since they are not always given sufficient time or information prior to the meetings to develop positions.

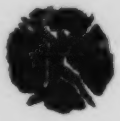
Many ENGOs indicate that they have good relationships with CONAMA in that they are able to discuss issues with technical staff. Some have criticized CONAMA for setting prioirities according to political rather than environmental realities. ENGOs also appear to have access to members of congress involved in the Environmental Committee of the Senate or the Natural Resources Committee of the Deputies.

While community organizations have access to their regional representatives, they are perceived to have less direct access to people at the heart of decision-making related to the environment in the political arena. Community organizations are not invited to participate directly in the consultative process of CONAMA. They have, however, the same ability to submit briefs and other comments to the Technical Committees of the CONAMA and COREMAs for projects with a regional focus.

Previous | Next | Index

Chilean National Secretariat

Français
Site Map | Home | Contact Us | Search
What's New | Canada-Chile Agreement | Canada-Chile Commission
Cooperative Activities | Canadian Implementation | FAQs | Publications



Green Lane Home | Contact Green Lane | Search the Green Lane | Canada Site

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What's New
Canada-Chile Agreement
Canada-Chile Commission
Cooperative Activities
Canadian Implementation
FAQs
Publications
Citizen Submissions

Table of Content

ENVIRONMENTAL MANAGEMENT IN CHILE - REPORT
November 1996

PART III

3. KEY ENVIRONMENT MANAGEMENT TOOLS

The following environmental management tools are described in this section: environmental standards and regulations; management, prevention and decontamination plans; environmental impact assessment system; and education programs.

Appendix A contains a list of the main environmental laws and regulations in Chile including a brief description of their application.

3.1 Environmental Standards and Regulations

Prior to the enactment of the Framework Law, environmental standards were generated by individual ministries. There was no mechanism to ensure consistency or coherence in the development or application of standards across ministries. The Framework Law establishes a mechanism for the formation of environmental standards which requires CONAMA to coordinate the process of environmental standards development. While the Framework Law and Supreme Decree 93 (explained in detail in 3.1.1) provide some of the tools required to order and coordinate environmental regulations, there remains a need to establish a mechanism to repeal outdated, irrelevant or contradictory regulations.

The Framework Law defines two types of environmental standards:

- *Primary standards protect human health*. They are applicable throughout the country and define levels which determine emergency situations. These standards are promulgated by Supreme Decree signed by the Minister of the Secretary General of the Presidency and the Minister of Health.
- *Secondary standards focus on other aspects of environmental protection*. They are also promulgated by Supreme Decree which must be signed by the Minister of the Secretary General to the Presidency and the Minister with jurisdiction in the matter being addressed. They can be applied to the whole or a part of the country depending on their nature.

3.1.1 Standards Development Process

Supreme Decree No 93 (October 26, 1995) establishes the process for developing and revising standards consistent with the Framework Law. The procedure for establishing environmental quality standards consists of the following steps:

- A priority list of standards to be developed is generated by CONAMA's Technical Committee (which includes government representatives from ministries with environmental responsibilities) at the end of each calendar year. Ministries can petition for the development of standards. The priority list is published in the Official Gazette after it is approved by CONAMA's Council

of Ministers.

- The Technical Committee establishes a sub-committee, consisting of government representatives from the relevant ministries, to develop a draft standard. Scientific and economic analysis must support the draft. In addition requirements for public meetings with relevant private and public organization must be fulfilled. The Technical Committee then reviews the draft and submits a revised draft to the Executive Director of CONAMA.
- CONAMA's Executive Director ensures that the draft standard is published in the Official Gazette within 60-90 days of its development.
- The Advisory Council to CONAMA reviews the draft standard.
- The standard is modified by the Technical Committee to reflect the Advisory Council's comments and is presented to the CONAMA's Council of Ministers for approval.
- The President of the Republic must approve the standard.
- The standard is established by Supreme Decree.

The time required to study and approve a standard, or to review an existing standard requires a minimum of 255 working days. Standards must be specific as to their territorial scope and they must be reviewed every five years. All standards are equally compulsory for all sectors, both private and public.

3.1.2 Enforcement of Environmental Regulations

Ensuring compliance with environmental regulations, including monitoring and reporting, is the responsibility of the ministries and their services. CONAMA is expected to play an increasingly important role in ensuring consistency of enforcement practices.

While enforcement practices differ across ministries and services, lack of funding and personnel, particularly well-trained personnel, means that enforcement is generally weak although efforts are being made to improve. The availability of qualified inspectors and equipment is currently inadequate. This is compounded by the fact that inspectors are often not given adequate direction, leaving considerable discretion in the application of environmental regulations.

Monitoring and Reporting

Government inspectors have the ability to investigate compliance with environmental standards by taking measurements, requesting information including environmental audits at the expense of the target of inspection, and preparing reports. These inspectors can make claims to administrative and judicial authorities in the event of an infringement of environmental law. Officials with these powers are employed by municipalities, the Chilean police force and by many other government services including: CONAMA, the Health Service, the Agency for the Control of Emissions from Fixed Sources, the Superintendency of Sanitary Services, the Superintendency of Electricity and Fuels, the Agriculture and Livestock service, the Ministry of Mining, the Ministry of Housing and Urban Development, the Ministry of Public Works, the Ministry of Public Lands, the Ministry of Transportation and Telecommunications, the National Forestry Corporation, The National Fishery Service, the Central Water Authority, the Territorial Maritime Authority.

As a general rule government agencies conduct inspections, rather than requiring compulsory reporting. There are a number of exceptions. Permits granted through the environmental impact system frequently require companies to report to various ministries. Companies that generate or receive industrial waste must file reports on a monthly basis. The Ministry of Health may require periodic reports on emissions. For example, some megasources are required to install monitoring networks to check air quality. Finally, specific companies are required to file specific reports (e.g., the *Compañia Minera Disputada de las Condes* must provide technical reports on sulphur dioxide emissions).

Some activities require prior inspection by officials, such as sanitary utility installation, tailings deposit construction, soil quality qualification for changes in use or forestry management plan approval.

For the most part, government agencies do not have their own monitoring equipment for environmental pollution control; it is provided by companies generating emissions. An exception is publicly-owned laboratories for monitoring water quality, such as those owned by the *Servicios de Salud Ambiental*, Environmental Health Services. Inspectors must ensure that privately owned equipment is properly calibrated.

There is a need for coordination of monitoring mechanisms and data collection among ministries. In some cases, data collected is not always compiled in a comparable or compatible comprehensible or useful manner.

Penalties and Sanctions

There is no criminal liability in Chile for environmental infractions. Administrative and judicial authorities have the power to order access to facilities for inspection purposes and the installation of monitoring networks. Failure to comply with environmental regulations can result in sanctions, such as fines and suspension of operations, imposed as a result of administrative proceedings or through civil courts.

The Framework Law establishes civil liability for environmental damage. Damage is presumed if infringement is proven. Claims of environmental damage can be filed with local courts or brought before administrative authorities, such as the Health Services Department of the Ministry of Health or the local courts, who may issue warnings, impose fines, or order permanent or temporary shut-downs to restore the environment. According to the Framework Law and the *Ley Orgánica de Municipalidades*, municipalities and other state agencies with jurisdiction have a responsibility to petition local courts to apply sanctions to those infringing environmental laws, notably for sources of emissions that do not comply with pollution prevention or decontamination plans (see section 3.2.2) or management plans (see section 3.2.1).

Defendants are given the opportunity to examine evidence, defend against charges, and appeal. In cases of liability for environmental damage, the offender bears the burden of proving the absence of negligence that regulations have not been violated.

There is a need for judges to develop environmental expertise. With the exception of the Health Services Department, other jurisdictional bodies are not experts in environmental issues.

Recurso de Protección

The Constitution provides a remedy to Chileans for environmental damage. According to the 1980 Constitution of Chile, all individuals have the right to live in a pollution-free environment and the State has a duty to uphold this right and to safeguard the preservation of nature. If, by action of the government or the private sector, this right is infringed upon, the person affected may appeal to the Court of Appeal in the location where the violation has been committed, requesting that the offending activity be suspended and protective measures adopted. This is called the remedy of protection (*recurso de protección*).

Any party affected has recourse to the Court of Appeal. This court can order a stop to the contaminating activities or order an investigation that may lead to other sanctions. The Court of Appeal has the power to adopt any measure it deems suitable to establish the rule of law and protect the parties in the case of a *recurso de protección*. The *recurso de protección* has resulted in 65 cases since its institution in 1980.

3.2 Management, Prevention and Decontamination Plans

3.2.1 Management Plans

The Framework Law obliges government agencies, responsible for the management and conservation of renewable natural resources in a specific area, to draw up

management plans for these resources. The purpose of the management plans is to assure the regenerative capacity and biological diversity of renewable natural resources, particulary those species in danger of extinction. Management plans do not apply to projects or activities which have already been approved by the environmental impact assessment system.

3.2.2 Pollution Prevention and Decontamination Plans

One of the most powerful tools created by the Framework Law is the ability of the Minister of the Secretary General of the Presidency to declare, by Supreme Decree, saturated or latent areas. These declarations are made in conjunction with other ministries, depending on the nature of the environmental standards which have been violated. Once an area is declared saturated, a prevention and decontamination plan must be drawn up to restore the area. It is the responsibility of CONAMA, pursuant to a report from the respective COREMA, to prepare the plan. Plans are implemented through a Supreme Decree, thus compliance is mandatory according to the law.

Prevention and decontamination plans must: describe the relationship between total emission levels and the contaminant levels to be regulated; define a deadline to achieve the emissions reduction goal; identify those responsible for compliance and the authorities responsible for supervision; identify the instruments to be used to meet the plan's objectives; identify the proportion by which emissions must be reduced by the activities responsible, estimate economic and social costs; and propose, if possible, emission compensation mechanisms. The plans may use regulatory or economic instruments, including emission standards, transferrable permits, and taxes, as appropriate.

Once a plan is put in place, polluters in the area are required to comply with the plan. Only those activities which are in compliance may occur. Verification of compliance is the responsibility of CONAMA or the relevant COREMAs. Judges have the ability to order fines, temporary or permanent plant closures, or damages, and loss of permits or concessions to ensure compliance with the plan.

3.3 Environmental Impact Assessment System

The Framework Law establishes a system of environmental impact assessment for all projects and activities undertaken in Chile that may affect the environment. The environmental impact system is widely considered to be the most important management tool provided by the Framework Law.

While this system is intended to be mandatory, it has not yet passed through the office of the Controller of the Republic (*Controlaria General de la República*). The system is currently being used on a voluntary basis, particularly by proponents of large projects. Responsibility for the administration of the environmental impact assessment system, including coordination of the state agencies, rests with CONAMA and its regional offices, the COREMAs.

All permits of an environmental nature required for new projects or modifications to projects, undertaken by both the public and private sector, can be granted through the environmental impact assessment system. This one window approach is viewed as a major advantage of the system. Currently, the task of applying to all the relevant offices for permits can be difficult and time consuming (e.g., to build a dam a company would be required to seek permission from CONAF, SAG, and the Central Water Authority, among others). Through the environmental impact assessment system, a company need only deal with a COREMA, and possibly CONAMA.

The Framework Law specifies that the following projects or activities may only be carried out or modified after the evaluation of their environmental impact:

- Aquaducts, dams or reservoirs and irrigation works subject to the authorization provided for in Article 294 of the Water Code; canals, drainage

ditches, dredging, control or significant alteration of natural water bodies or courses of water;
- High voltage electric transmission lines and substations;
- Electric energy generators of more than 3 MV;
- Nuclear reactors and establishments and related installations;
- Airports, bus, train and truck terminals, railroads, service stations, highways and public roads which might affect protected areas;
- Ports, navigation routes, shipyards and maritime terminals;
- Urban or tourist development projects in areas not included in one of the plans alluded in the following letter;
- Regional urban development plans, inter-community plans, community regulatory plans, sectional plans, industrial or real estate projects which impact upon or are executed in areas declared latent or saturated;
- Mining development projects, including coal, petroleum and gas, embracing prospecting, the operation of mines, processing plants and the disposition of residues and barren land, as well as the industrial extraction of dry materials, peat, turf or clay.
- Oil, gas, mining and other analogous pipelines;
- Industrial size factory installations such as metal working chemicals, textiles, the production of construction materials, equipment, metal and leather products
- Agricultural industries, slaughterhouses, nurseries, hatcheries, brooder houses, stables, dairy establishments and commercial feeder lots;
- Forestry development or exploitation projects on fragile soils, in areas covered by native forest, cellulose, paper paste and paper industries, shipbuilders, wood products factories and sawmills, all on an industrial scale;
- Intensive hydro-biological resource exploitation or cultivation projects and processing plants;
- Production, storage, transportation, disposal or habitual reutilization of toxic, explosive, radioactive, inflammable, corrosive or reactive substances;
- Environmental improvement projects such as sewage and water systems, treatment plants for water and solid waste residues from domestic sources, sanitary land fills, underwater emissions, systems for the treatment and disposal of liquid and solid industrial waste residues;
- The execution of works, programs, or activities in national parks and reserves, national monuments, virgin wilderness reserves, nature sanctuaries, marine parks of reserves, or any other areas placed under official protection, in cases in which the respective legislation permits; and
- The heavy application of chemical products in urban or rural areas close to populated centres or to water courses or masses which might be affected.

Environmental Impact Studies and Statements

Proponents of a project will be required to submit an Environmental Impact Study or a less detailed Statement depending on the anticipated impact of the project. Before a project is undertaken, Environmental Impact Statements or Studies are to be submitted to the Regional Commission on the Environment (COREMA) in the Region where the project is to be undertaken. In cases where the project may result in environmental impacts in different Regions, the Statements or Studies are to be submitted directly to CONAMA. When a COREMA lacks technical expertise for evaluation, submissions may be referred to CONAMA.

Environmental Impact Studies are to be prepared for projects or activities that may generate risks to human health due to effluents, emissions or residue, adverse effects on renewable natural resources (i.e., air, water and soil), affect human communities, cause the resettlement of people or significant alteration of the ways of life, and/or significantly alter the landscape or structures of cultural value. They are prepared by the proponents of the projects, typically with the assistance of consultants. The quality of the study may vary depending on the expertise of the consultants.

Studies must include information describing the project or activity, a prediction of environmental impact (including a baseline), a plan for compliance with environmental legislation (including actions to be taken to eliminate or minimize the

adverse effects of the project) and a plan for monitoring environmental impacts. Terms of reference may be submitted to CONAMA or the COREMA for their comment and guidance prior to undertaking the study. Terms of reference are occasionally published.

Proponents of projects or activities which are to be evaluated according to the environmental impact system, but for which an Environmental Impact Study is not required, will be required to prepare and Environmental Impact Statement. The Statement takes the form of an affidavit to the effect that the project is in compliance with environmental legislation.

Approval Process and Technical Reports

CONAMA or the COREMAs have 60 days to evaluate Environmental Impact Statements and 120 days to evaluate Environmental Impact Studies. Upon the expiration of these time periods, the project is considered approved even if no formal decision has been issued.

CONAMA and the COREMAs are responsible for coordinating the decisions which must be taken by ministries for the approval of a Study or a Statement, including approval of environmental permits required for the operation of a project. CONAMA or the COREMAs can request clarification, correction or amplification of the Environmental Impact Statements of Studies suspending, by mutual agreement, the deadline for the finalization of the period of evaluation. Statements and Studies are reviewed by a Technical Committee. Consultants may be used to assist in the evaluation of projects, especially more sophisticated projects which require specialized expertise.

An Environmental Impact Study shall be approved if it complies with environmental standards, accepts responsibility for environmental effects, and proposes acceptable mitigation, compensation and restoration measures. Approval means that CONAMA accepts the investor's evaluation of the resulting impacts and therefore the investor's monitoring program to be established as part of the project. In other words, it approves the number of monitoring stations and the frequency of air and water quality measurement as well as the sampling points. These become commitments contracted between the project investor and the regulatory authority. These details are integrated into a single approval document, the Technical Report.

The Technical Report includes all CONAMA's or the COREMA's requirements for approval of permits and specifies the monitoring network that must be established. It forms the basis for a certificate of approval issued by the *Intendente*. The environmental obligations, including monitoring responsibilities, of the proponent of the project are explicit in the permit. This is a one window approach: no government agency can deny another permit related to the same project for environmental reasons.

The investor is obliged to conduct and pay for the subsequent monitoring. The results of the monitoring must be reported periodically in accordance with the established program set out in the Technical Report. The regulatory authorities may, where they feel it is necessary, undertake their own compliance checking procedures. The Technical Report becomes the main tool through which the government establishes the enforcement of the environmental regulations.

If a project is rejected for environmental reasons, the project's proponent can appeal the rejection to CONAMA's Council of Ministers. The proponent of the project may also submit a new statement or study.

Public Participation

According to the Framework Law, CONAMA has a responsibility to ensure public participation in the evaluation of Environmental Impact Studies. The Framework Law requires the proponents of a project to publish, at their own expense, an extract of the Environmental Impact Study within ten days following the presentation of the

study to CONAMA. The extract must be approved by CONAMA and must contain basic information about the project, its location, amount of investment anticipated, the principal environmental effects and means of mitigation proposed.

Detailed information drawn from the Environmental Impact Studies is made available to incorporated citizen organizations or individuals who may be directly affected. They are permitted to submit comments on the Environmental Impact Study to CONAMA within 60 days of the publication of the extract. CONAMA is required to take these comments into account when considering the study. Whether the Environmental Impact Study is accepted or rejected, CONAMA, or the COREMAs, is required by law to respond to all of these comments.

If individuals do not agree with the approval of a particular Environmental Impact Study, they may appeal to CONAMA. If individuals are not pleased with the results of the appeal process they may take the case to court. Objections taken to court must have a legal basis.

3.4 Education Programs

The Framework Law states that the educational process must incorporate the integration of values and development of habits and behaviours which tend to prevent and solve environmental problems.

Public Education System

Primary and secondary schools are demonstrating increasing interest in boosting environmental awareness and incorporating environmental issues into their school curriculum. Presently, the secondary education syllabus does not explicitly include environmental programs. However, the education minister was recently invited to join CONAMA's Council of Ministers in the interest of developing a basic environmental education program to be applied in the school system.

At the university level it is possible to pursue a degree in Environmental Management at the *Universidad de Santiago, Universidad de Talca, Universidad de la Frontera de Temuco*. Other universities, including the *Universidad de Chile* and *Pontificia Universidad Católica*, have developed courses in environmental studies.

Training of Public Authorities

Environmental training for public sector officials is conducted mainly through CONAMA and to a lesser extent the ministries. Through to the end of July 1995, it is estimated that close to 2,000 public sector employees and community-based environmental leaders received some form of environmental training [2].

CONAMA is placing increased emphasis on providing training within the public sector. The organization is in the process of analyzing its environmental management and technical needs to develop a focused training framework for its programs. To date, CONAMA has relied on three sources for its training programs: internal course design, Chilean universities, and foreign environmental institutions. To increase its science and technical capacity, CONAMA is recruiting university graduates with bachelor and masters of science degrees.

Additional Training

CONAMA promotes and sponsors workshops and seminars related to environmental protection for the general public. It also sponsors numerous environmental seminars and workshops in different parts of the country.

A growing number of private sector firms and academic institutions are now offering formal environmental management courses oriented to senior and middle management. The following are some examples of ongoing training:

- *Sociedad de Fomento Fabril* (SOFOFA), the Society for Industrial Promotion, established permanent environmental training programs financed by the German Karl Duisberg Foundation. The curriculum is based on German practices.
- The *Instituto Nacional de Capacitación* (INACAP), National Training Institute, offers special courses designed for environmental managers from the private sector.
- The *Sociedad Nacional de Minería* (SONAMI), the National Mining Society, is promoting environmental training for small mining companies.

Previous | Next | Index

Chilean National Secretariat

Français
Site Map | Home | Contact Us | Search
What's New | Canada-Chile Agreement | Canada-Chile Commission
Cooperative Activities | Canadian Implementation | FAQs | Publications

Green Lane Home | Contact Green Lane | Search the Green Lane | Canada Site

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What's New
Canada-Chile Agreement
Canada-Chile Commission
Cooperative Activities
Canadian Implementation
FAQs
Publications
Citizen Submissions

Table of Content

ENVIRONMENTAL MANAGEMENT IN CHILE - REPORT
November 1996

PART IV (a)

4. SELECTED ENVIRONMENTAL ISSUES

This chapter profiles the mining and forestry sectors in Chile and discusses how environmental issues associated with these sectors are managed. The chapter also describes Chile's approach to the protection and conservation of wildlife. It concludes with information on how the use of pesticides is monitored and controlled in Chile.

4.1 Mining

Mining is one of the most important sectors in the Chilean economy. In 1994, the mining sector constituted 8.7 percent of GDP [3] and accounted for 43.4 percent of Chilean exports. The industry is comprised of over two hundred companies, employing approximately 87,000 people or 1.7 percent of the work force.

Production and export of copper, gold, silver, iron ore and nitrates forms the backbone of Chile's mining industry. In order of importance, metal mining includes: copper, gold, silver, zinc, and lead. Non-metallic mining includes: saltpeter (sodium nitrate), iodine, gypsum, lithium, calcium carbonate, sodium chloride, kaolin, keiselghur, clays, marble, borax, silica, and semi-precious gemstones.

Chile is the world's largest copper producer and exporter. In 1994, Chile produced 2.2 million tonnes of fine copper out of a world total of approximately 9.3 million tonnes. Chile is the world's second largest producer of rhenium, lithium, iodine and molybdenum; the world's fifth largest producer of boron; seventh largest producer of selenium; eighth in silver and tenth in gold. After copper, gold is Chile's most important mineral export commodity.

Between 1992 and 1994, Chilean mining continued to grow at a spectacular rate similar to the previous decade, especially in the production of copper, gold, and silver. Exploration investment has boomed in Chile and the start-up of several projects now in the planning stages will boost mining in Chile to even higher levels this decade, especially with respect to copper, silver, and gold.

The Chilean government is actively promoting the development of industries that manufacture mining equipment and provide services to the mining sector with a view to developing an enhanced export market, particularly to neighbouring South American countries. Currently exports of Chilean mining equipment can be found in North American and European markets, while Chilean exports of engineering services are directed mainly toward Latin American countries.

Mines in Chile can be divided into two main groups: underground and open pit. Open pit mining is more prevalent. In 1991, 66 percent of copper production, 63 percent of gold, and 100 percent of iron ore came from open mines [4]. In open pit, or surface mining, large volumes of rock can be processed using smaller labour forces than would be required for underground mining.

COMPOSITION OF THE MINING INDUSTRY

Both state-owned and private sector companies operate in Chile's mining industry. In the 1960s, the growing importance of mining in Chile, copper in particular, gave rise to the Large Scale Mining Law. The law authorized the state to acquire 51 percent of the stock of the five main mining companies in Chile. In 1971, under the administration of the Allende government, all large scale mines were nationalized. Later, under the Pinochet military regime, these mines were consolidated into one state-owned company: *Corporación Nacional del Cobre de Chile* (CODELCO). CODELCO remains a state-owned company today, however, since 1992 it has had the ability to sell undeveloped mining concessions under its control. CODELCO is also able to enter into agreements with private sector investors and developers to exploit existing mining operations as well as undeveloped concessions.

In addition to CODELCO, there is one other state-owned mining company in Chile: *Empresa Nacional de Minería* (ENAMI). There is a number of private sector companies involved in both metallic and non-metallic mining

In 1994, for the first time since the mines were nationalized in 1971, private sector copper production overtook that of the state owned production.

CODELCO

CODELCO is, by far, Chile's most important mining company. It is the largest supplier of primary copper in the world, and its exports account for approximately 30 percent of Chile's total exports. The corporation's sales are approximately US$ 4 billion per year. In 1993 its authorized investments were US$ 460 million.

CODELCO's known reserves exceed 7,000 million tonnes of refined copper with an ore grade of about 0.9 percent. This represents about 20 percent of the known world reserves of this metal. These reserves mean that CODELCO can continue to operate at current levels for the next 100 years. In addition, CODELCO owns 30 percent of the world's molybdenum reserves. Its production of 15,000 tonnes per year of molybdenum represents about 30 percent of the world total. CODELCO also recovers the associated minerals molybdenum, silver, gold and rhenium.

ENAMI

ENAMI is a state-owned mining company second in importance to CODELCO. Its mission is to encourage small and medium sized mines. ENAMI does not operate mines but buys minerals from local entrepreneurs which it then processes, smelts, refines, and markets. Its major objective is to encourage the exploitation and treatment of all kinds of minerals, to carry out their processing and marketing, and also to develop mining-related activities that provide various services to the sector. ENAMI has four processing plants, two smelters, and one refinery. The processing plants range in annual capacities from 12,000 tonnes of concentrate to 70,000 tonnes.

In 1994 revenues from product sales were US$ 841 million and profits US$ 17 million. To increase profits ENAMI is in the process of modernizing its facilities. The company has an investment budget of US$ 150 million for the 1995-1997 period of which US$ 5 million has already been directed to its *Planta Matta* facility for purchases of new equipment.

PRIVATE SECTOR COMPANIES

Private sector mining now exceeds the production levels of the large-scale state-run mines. The private sector is dominated by a dozen large multinational companies which are jointly or individually involved in most of the mega-projects now in production at an advanced stage of development. These ventures range from US$ 40 to US$ 400 million while a few exceed US$ 500 million. In total, they represent an investment of US$ 6.245 billion.

The four largest private mining projects in Chile currently in production are:

- *Escondida*, a US$ 1.1 billion investment by BHP Utah and RTZ;
- *La Candeleria* project, a US$ 538 million investment owned by Phelps Dodge and Sumitomo;
- *Quebrada Blanca*, a US$ 360 million investment by Cominco, Teck, ENAMI and *Minera Pudahuel*; and,
- *Cerro Colorado*, a US$ 300 million venture of Rio Algom.

Several other mega-projects, now in the feasibility or construction stages, are set to begin production within the next three or four years. These include:

- *Collahuasi*, a US$ 1 billion project owned by Falconbridge and *Mineras Mantos Minorco*; and,
- *El Abra* a US$ 1 billion project owned by Cyprus El Abra Corporation and CODELCO.

FOREIGN INVESTMENT

The majority of foreign investments in Chile are related to the mining sector. Between 1974 and 1993 investments in projects in this sector have totalled US$ 5.2 billion, which represents 52.6 percent of the total investments in the country in all sectors of the economy.

The main sources of this investment during the 1974-1993 period were the U.S. (47.9 percent) and Canada (20.3 percent). Other major investors were Australia (9.6 percent), UK (6.4 percent), and New Zealand (5.3 percent). Canada's share of the investment total is increasing significantly. From 1994-1995, investment from Canada represented 24 percent of the total, followed by the U.S. at 16 percent.

Canadian investment in the mining sector in Chile accounts for three-quarters of the US$ 4 billion that Canadian companies have invested in actual and planned projects in Chile. Canadian exports of mining equipment other than machinery were valued at C$ 15.4 million in 1994, C$ 1 million above the 1993 figures and double the value of equipment exports to Chile in 1992.

Environmental Issues

This section provides details on some of the environmental problems associated with the mining sector in Chile. It also outlines environmental laws and regulations that pertain to the mining sector and provides some information on monitoring. Finally, environmental issues specifically related to public sector and private sector mining companies are discussed.

The main environmental problems associated with the mining sector are: air pollution due to gas and particle emissions; water pollution due to liquid effluent containing particulate matter, dissolved metals and acids; soil contamination; and risks posed by abandoned mining sites and tailing dams. Government-owned installations, small and medium-sized mines and smelters are the most significant sources of environmental degradation in the mining sector.

Improved environmental performance in this sector will require further technical improvements, including the application of modern technologies in areas such as tailings containment systems, tailings burial, management of abandoned residuals, drainage of open-pit mines, and control blasting techniques.

Air Quality

The metallurgical industry, principally copper smelters, is the main source of sulfur dioxide (SO2) emissions in Chile. This industry generates 92 percent of total sulfur dioxide emissions in the country due to the high sulfate content of the copper ore. In

the Santiago area alone, SO2 emissions amount to 22,400 tonnes per year. In 1989, SO2 emissions in Chile were 1.0 million tonnes. Chile is the tenth greatest SO2 emitter in the world.

In addition to emitting sulfur dioxide, the copper smelters also release significant amounts of arsenic into the atmosphere. There have been reductions in the amounts of sulfur dioxide and arsenic released in recent years, but the problem remains serious. Continuing process development in the area of bacterial action is likely to make it possible to process copper sulfide ores using leaching and solvent extraction rather than the traditional smelting processes. This would significantly reduce SO2 emissions.

Table 4.1 illustrates the results of a 1993 Ministry of Mines report, entitled «Mines and the Environment» (*Minería y Medio Ambiente*) which identified the key sources of sulfur emissions in Chile.

TABLE 4.1 SULFUR EMISSIONS IN CHILE FROM FIXED SOURCES (1989)

REGIONS II TO VIII

Source	Sulphur Emissions ('000
Copper Smelters	874.4
Toasting Plants	22.9
Thermal Generating Stations	49.7
Cement Plants	3.8
Iron ore Pellet and Steel	3.6
Total	**954.4**

Water Quality

Water pollution can result from poor management of water used in mining operations and from tailings disposal. Some examples of tailings disposal are provided in a 1993 report of the Ministry of Mines:

- *Chuquicamata* (CODELCO) - Tailings are deposited in the *Salar de Talabre*, after partial recovery and recycling to recover copper and molybdenum.
- *Salvador* (CODELCO) - For more than 30 years, tailings were discharged to the *Rio del Salado* and deposited on the beaches in the *Chañaral* Bay leading to the destruction of much of the marine life in the area. The construction of the *Pampa Austral* tailings dam in 1990 has alleviated this situation.
- *Andina* (CODELCO) - Tailings are deposited in the *Los Leones* tailings dam and no pollution reaches the *Aconcagua* River. The mine has implemented aquaculture and reforestation programs to improve the environment in the area of the mine.
- *El Teniente* (CODELCO) - The mine has used successively the tailings dams at *Barahona, Cauquenes, Colihues* and since 1987 the *Caren* Dam. The water in these dams does not comply with irrigation water standards. CODELCO has set up an experimental station to study the suitability of the water for producing crops and raising animals.

Though small-scale mining in Chile represents a very minor proportion of the metallic mining production - 3 percent in copper, 3 percent in gold and 0.36 percent

in silver - the environmental damage caused by small-scale mining operations which do not apply standard environmental protection measures is significant. For example, the tailings from many small-scale mines are released directly into the local waterways with no prior treatment [5].

Soil Contamination

The Ministry of Agriculture's National Institute for Agricultural Research (*Instituto Nacional de Investigaciones en Agricultura*) has investigated the metallic content, particularly the copper content, of soils in Chile. Studies were undertaken between 1981 and 1990, with a view to determining the effect of soil mineral concentrations on agriculture.

The greatest potential for conflict between copper mining and agricultural activities is in the territory that extends from Region I to Region VII. In these regions, productive valleys traverse the main copper ore bodies and hence the mining and smelter installations. The most marked soil deterioration has occurred in the following areas:

- the *Copiapo* Valley near the *Paipote* smelter, which is owned by ENAMI;
- the *Aconcagua* Valley near the *Saladillo* mine and the*Chagres* smelter that are owned by CODELCO;
- the *Valle del Mapocho* where the privately-owned *Los Bronces, Pudahuel* and *La Africana* mines are located; and,
- finally the *Valle del Cachapoal* near *El Teniente* mine, which is also owned and operated by CODELCO.

Chile's iron ore deposits are concentrated in the regions of *Atacama* and *Coquimbo*. These deposits are low in toxicity, so they present a much lower environmental risk than copper and other minerals. Environmental damage from lead discharges from mining operations is also not as great a concern as copper, since the main ore-bodies are located in the sparsely populated Región XI *de Aisen*, where there are considerable natural dilution effects.

Clean Closure of Abandoned Sites

An immediate challenge facing the country in the mining sector is the clean-up of abandoned mines, tailing dams and facilities. Chile has little experience in this activity to date. The considerable size of the mineral deposits has allowed them to be exploited for more than 70 years in many cases. Many of the deposits currently being developed have closure periods of 8 to 30 years.

KEY ENVIRONMENTAL LAWS AND REGULATIONS

The main regulations affecting mining and smelter sites in the country include*:

- Law No. 3,133 (1916) requires that all liquid effluents from mines, metallurgical plants and factories be treated before being discharged into rivers, lakes or the ocean. Decree No. 351 (1992) of the Ministry of Public Works establishes restrictions to prevent groundwater contamination.
- Supreme Decree No. 185 (1992) of the Ministry of Health establishes ambient air quality standards for SO2 and particulates and requires that operations in areas determined to be saturated, develop and implement decontamination plans;
- Supreme Decree No. 1 (1992) of the Ministry of National Defense;
- Supreme Decree No. 4 of the Ministry of Health establishes standards for emissions of particulates at individual and grouped stationary sources;
- Supreme Decree No, 553 (1990) of the Ministry of Health acts as an amendment to the Sanitary Code and sets conditions for solid waste disposal. It establishes that the National Heath Service *(Servicio Nacional de Salud)* is responsible for issuing permits for waste disposal; compliance with regulations; and supervising the construction, repair, modification or enlargement of potable water treatment plants and sewage plants;

- Water Code;
- Supreme Decree No. 144 (1961) of the Ministry of Health requires adequate treatment of gases, dust or any other contaminants from factories and work places. It assigns responsibility to the National Health Services for monitoring and compliance; and
- Resolution No. 1215 (1978) of the Ministry of Health specifies the minimum standards to prevent and control atmospheric contamination and sets maximum concentrations over time periods for particulates SO2, CO2, NO2 and O3.

Monitoring

Monitoring of compliance with environmental regulations for the mining sector is carried out primarily through periodic inspections, as established in the operating permits or decontamination plans. Inspections are performed by the Ministries' services or regional agencies, including:

- National Service of Geology and Mining, *Servicio Nacional de Geología y Minería* (SERNAGEOMIN), a division of the Ministry of Mines;
- National Health Service, a division of the Ministry of Health;
- Central Water Authority, *Dirección General de Aguas* (DGA), under the Ministry of Public Works;
- Territorial Maritime Authority and Merchant Marine, *Dirección General del Territorio Marítimo y Marina Mercante* (DGTM y MM), under the Ministry of Defense; and
- Agriculture and Livestock Service (SAG) of the Ministry of Agriculture.

New mining projects will be subjected to the environmental impact assessment system in order to obtain operating permits. At present, the Ministry of Mines can require that decontamination plans be introduced in areas considered to be saturated. Many government-owned installations are now in the process of completing or implementing decontamination plans. The government has taken little direct action to regulate gold mines and smelters and has relied on the companies to become self-regulating.

In cases where companies have a responsibility to monitor and report water quality pursuant to the Technical Report issued by the COREMA or CONAMA as a result of an Environmental Impact Study, the results are sent to the appropriate ministerial service. The services, in particular the DGA and SAG, often do not have sufficient trained personnel to adequately analyze and react to the data received. There is also a need to improve the coordination of data collection and exchange across ministries.

ENVIRONMENTAL MANAGEMENT IN STATE-OWNED COMPANIES

The state's two mining companies, CODELCO and ENAMI, are the principal sources of mining pollution in Chile. Many of their facilities are old and highly polluting; some of their operations are 50 years old. Many facilities have been forced to develop decontamination plans which require them to develop programs for plant conversions to ensure conformity with national and international environmental standards.

CODELCO will invest, in the period 1994-99, more than US$ 640 million in decontamination projects as summarized in Table 4.2.

TABLE 4.2 CODELCO: PORTFOLIO OF DECONTAMINATION PROJECTS

Project	Division	(US$ millions)
Dam IV-B. Level 2134 and Associated Works	Andina	68.7

Long term Disposal of tailings	Andina	216.2
Gas Scrubbers - Potrerillos Smelter	Salvador	35.3
Sulfuric Acid Plant Teniente	El Teniente	71.2
Gas collection and treatment CPS Stage 2a	Chuquicamata	62.5
Sulfuric Acid Plant at Potrerillos Smelter (planning stages)	Salvador	61.0
Minor Projects		12.9
Total		**642.8**
		Source:Project List. Program 1994-99

ENAMI's decontamination projects are among the most critical because its facilities are considered the most outdated, particularly the smelters of *Paipote* and *Ventanas*. Decontamination plans have been developed for these two installations.

The following is a description of activities at state-owned smelters relevant to the environment:

- *Chagres* (*Cia Minera Disputada de las Condes)* - In 1990 the smelter was forced to close for three weeks to comply with the annual SO2 emission level. Since then it has installed a flash furnace, thereby tripling production and increasing the capture of SO2 to 94 percent by means of a sulfuric acid plant.
- *Paipote* (ENAMI) - A project is in progress to modify the smelter and increase the capacity of the sulfuric acid plant. A decontamination program at the smelter is underway, which will require the reduction of the reverberatory feed and the installation of a sulfuric acid plant. Air, water and soil contamination by this smelter are affecting the people and agricultural activities in the *Copiapó* valley.
- *Potrerillos* (CODELCO) -This plant exceeds daily and annual emission standards. Decontamination and management plans are required.
- *Ventanas* (ENAMI) - A decontamination plan calling for the installation of precipitators and the future construction of a sulfuric acid plant will reduce SO2 particulate and arsenic emissions at the smelter. The combined emissions from another state-owned copper smelter and a thermoelectric power station in the area have caused severe deterioration of the immediate environment. The health of the local population has been compromised as have the agricultural activities in the surrounding area.
- *Caletones* (CODELCO - El Teniente) - Implementation of a decontamination plan for the *Caletones* smelter and copper refinery at *El Teniente* mine is among the government's immediate priorities. The plan includes the elimination of the old reverberatory furnace technology, a change to a modified *El Teniente* converter and the installation of a sulfuric acid plant. This plan responds to the damage this smelter causes to air quality particularly by gases and particulates that are blown by the prevailing winds toward the city of Santiago.
- *Chuquicamata* (CODELCO) - The copper smelting and refining processes at the *Chuquicamata* mine have impaired the air quality in the mining camp as well as in the neighbouring city of *Calama*. A decontamination plan has been approved which will improve the capture of SO2 emissions from 50 percent to 76 percent and reduce particulate emissions from 25 tonnes per day to less than 10. The decontamination plan involves a change in smelting technology, elimination of reverberatory furnaces, the installation of flash furnaces, and the construction of precipitators and sulfuric acid plants. The plan has been drafted and construction has begun. Planning is underway to reduce the arsenic contamination by modifying the toasters and collecting arsenic in a stable form.
- *Pampa Austral* (*Salvador* Division of CODELCO) - Construction of the tailings dam was completed in 1990. Prior to that, the mine was depositing its tailings directly into the sea, causing serious damage to the local marine

ecosystems and contravening the terms of international treaties.

ENVIRONMENTAL MANAGEMENT IN PRIVATE SECTOR COMPANIES

Overall, private sector mining companies are positive about the newer environmental laws and regulations. Supreme Decree No. 185 (1992) of the Ministry of Health, regulating air quality, was well received by smelting companies. It is consistent with the industry's general operating principles and it established objective numerical procedures to guide performance. Before compliance with environmental standards became mandatory, it was often difficult for mine managers to justify investments in environmental protection.

Private sector companies favour the creation of transparent procedures for revising and developing environmental laws and regulations that ensure the consistent application of mandatory environmental standards. Procedures that reduce uncertainty and the potential for uneven application of standards, according to the discretion of government officials, are perceived to level the playing field among competitors and create a more favourable investment climate.

The larger private sector mining companies have already adopted environmental policies that go beyond Chile's existing environmental regulations. The bulk of private sector development of the mining sector in Chile has taken place since 1985 - a time when environmental issues were a concern at the national and international levels. Since many of these private companies are subsidiaries of international mining companies based in Canada, U.S., U.K., Finland, Australia, and South Africa they have already committed to applying the environmental standards of their home countries to their foreign operations.

The development of gold mining in Chile is relatively recent so the technology being used is comparatively modern. Even though smelting processes use highly toxic elements of sodium cyanide and mercury, large-scale gold operations are considered to be fairly clean due to the efficacy of the installed processes at the mine sites.

A major problem exists with respect to the implementation of environmental controls within small and medium-sized mining companies, where knowledge about even basic environmental management techniques is lacking. These companies often do not fulfil even minimal procedures for environmental protection and mine safety. The inadequacy of environmental controls is particularly acute among the small gold mining operators where quantities of mercury are being handled improperly, placing both people and the environment at risk. One of the basic problems is a lack of education and professional training.

4.2 Forestry

The forest sector accounts for approximately 3 percent of Chile's GDP. This sector's contribution to the GDP has increased significantly since 1975 and is expected to reach 7 percent by the year 2000 [6]. Approximately 100,000 people are directly employed in the forest sector, including personnel from forest plantations, industries and services directly related to the sector. An additional 150,000 people are indirectly employed by the sector.

Foreign exchange earnings for the forestry sector have increased from 8.1 percent of total foreign revenues in 1975 to 13.5 percent (US$ 1.564) in 1994.

FOREST RESOURCES

Chile's productive forests include both indigenous forests (7.5 million hectares) and tree plantations (1.7 million hectares). In 1993, the combined timber harvest had a volume of 29.3 million m3; two thirds of which was put to industrial use and the remaining extracted for firewood. (These estimates were made in 1993 based on the assumption that productive forests are those forests with stocks greater than 30 m3 per hectare.)

Approximately 10 percent of the productive forests are managed by Chile's National Forestry Corporation (CONAF) under the jurisdiction of the Ministry of Agriculture.

Indigenous Forests

Productive indigenous forests in Chile are composed of a variety of tree species. They are located for the most part in Region X which contains 48 percent of the total forested land area and 84 percent of the volume of standing timber.

The majority of the indigenous forest is privately owned. Only 1.9 million hectares are state-owned and protected under the *Sistema Nacional de Areas Silvestres Protegidas del Estado* (SNASPE), National System of State Protected Wild Areas.

Indigenous forests are growing at between 12 and 15 million m3 of timber annually, with 15 percent of this growth suitable for industrial production and 85 percent suitable for fibre or fuel wood. Although the indigenous forests are vast and possess four times the volume as tree plantations, less than one fifth of total production originated from indigenous forests in 1993.

Tree Plantations

Approximately 85 percent of the wood used by the Chilean forestry industry comes from tree plantations. These plantations consist of radiata pine (80.3 percent of the total area), eucalyptus plantations (12.2 percent of the total area); and other species including atriplex and tamarugo.

The growth in the acreage of tree plantations began in the second half of the 1970's after the passing of Decree Law No. 701 (1974). The purpose of this decree was to assure the reforestation of exploited forest areas and to provide incentives for the proper management of forest resources through financial and tax benefits. It guaranteed that land suitable for forestry could not be expropriated. The plantations supplying the vast majority of Chile's industrial wood are in the hands of a few corporations that started reforestation programs required by this law twenty years ago.

FOREST INDUSTRY

Chile's forest industry is rapidly evolving from supplying a small, protected market to supplying world markets. Today, close to 70 percent of the country's forest and forest industry output, in value terms, is exported. Of the total timber volume harvested for industrial purposes in 1993, 43 percent was dedicated to pulp, 39 percent to wood panels and sawn wood, 10 percent to the woodchip industry and 8 percent was raw exports.

Products originating from primary processing make up the bulk of the Chilean forestry product exports. In 1994, these shipments represented 72.1 percent of the total value of forest products exported. The major export is cellulose (approximately US$ 718 million) representing 45.9 percent of the total for the sector.

Canadian companies supplying equipment and services in the forestry sector have been steadily increasing their presence in the Chilean market providing products and services related to: silviculture practices; harvesting practices; sawmill engineering and equipment; lumber dying kilns; chipping equipment; and pulp and paper machinery and equipment.

Pulp and Paper Industry

The pulp and paper industries constitute the area of greatest economic importance within the Chilean forest industry in production and generation of foreign exchange. While five corporations control the overwhelming majority of Chile's pulp and paper output, a few small mills manage to compete in specialized niches of the domestic paper and board market. Mills dedicated to supplying international markets are

larger and generally more efficient than those designed to supply the national market.

In 1994, cellulose production totalled 1.96 million tonnes. It is estimated that production in 1995 will reach 2.04 million tonnes. At present, this industry comprises 7 chemical cellulose plants, 4 mechanical pulp plants and 6 recycled pulp plants. Cellulose production capacity in Chile is concentrated in six companies: *Cellulose Arauco y Constitution S.A; Compañía Manufacturera de Papeles y Cartones (CMPC) S.A; Celulosa del Pacifico S.A; Industrias Forestales S.A; Forestal e Industria Santa Fe S.A; and Celulosa Licancel S.A.*

Chilean production of paper and carton totalled 553,300 tonnes in 1994, of which 185,800 tonnes were newsprint paper, 188,500 tonnes packaging paper, 98,500 tonnes writing and printing papers, and 75,500 tonnes sanitary tissue. The present paper and carton industry is made up of three newsprint paper factories, ten packaging plants, three plants making writing and printing papers, three plants for sanitary paper products and two plants making thin cardboard.

Woodchip Industry

Although the export of woodchips from Chile began in 1986, large scale production did not commence until 1989, when the first industrial woodchip plants entered production. In 1993, the woodchip industry comprised 94 productive units that produced a total of 5.7 million m3, of which 50.3 percent was destined for the domestic market and 49.7 percent for export markets. The domestic market uses woodchips primarily for cellulose production. Woodchip plants are located in the south of the country, between the Regions VII and XII, with the greatest concentration of plants being in the Regions VIII and IX. Although more than 20 companies produce wood chips, just a handful of producers account for 90 percent of all exports. *Forestal Del Sur Ltd* is the largest single exporter with 27 percent of the 1994 export market.

Sawmills and Related Industries

The large and intermediate sawmills are responsible for 55 percent of the production out of a total sawn wood production of 3.1 million m3. During 1993, over 1,000 sawmills were operating including: 11 sawmills with production levels of more than 50,000 m3 annually; 32 intermediate size sawmills with production between 10,000 and 50,000 m3 annually; 239 small stationary sawmills; and 872 mobile circular saw sawmills.

The Chilean finished wood products industry comprises about 5,000 production plants. Since 1985, an accelerated growth trend has been observed in shipments of finished and semi-finished wood products. The export figures show that the overall export earnings of forestry products increased at an annual average rate of 19.3 percent during the period 1985 and 1994. Export shipments from the finished wood products sector grew at an accelerated rate of 45 percent over this period.

Previous | Next | Index

Chilean National Secretariat

Français
Site Map | Home | Contact Us | Search
What's New | Canada-Chile Agreement | Canada-Chile Commission
Cooperative Activities | Canadian Implementation | FAQs | Publications

Green Lane Home | Contact Green Lane | Search the Green Lane | Canada Site

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What's New
Canada-Chile Agreement
Canada-Chile Commission
Cooperative Activities
Canadian Implementation
FAQs
Publications
Citizen Submissions

Table of Content

ENVIRONMENTAL MANAGEMENT IN CHILE - REPORT
November 1996

PART V

Conclusion

The purpose of this report is to provide Canadians with a better understanding of Chile's approach to environmental management. Development of a modern framework for environmental protection, based on the concept of sustainable development, is underway in Chile. Through initiatives undertaken in the last three years, in particular, the establishment of Chile's National Environmental Commission (CONAMA) and the Environmental Framework Law, the groundwork has been laid for a program of comprehensive environmental management.

The credibility of the Chilean approach depends on the success of CONAMA in discharging its mandate to coordinate the development of environmental standards and regulations, to coordinate enforcement and compliance and to oversee the environmental impact assessment process. (Mandatory application of the environmental impact assessment system, currently applied on a voluntary basis, is critical to the Chile's ability to protect the environment.) As a coordinating body, without the status of a ministry, CONAMA has a tough job in advancing environmental protection in areas which have traditionally fallen within the jurisdictions of government ministries and where there are often competing interests. In the short term, additional financial and human resources, support from the ministries, and political support will be critical to CONAMA's success. In the longer term, Chile may find that the consolidation of the responsibility for environmental conservation and protection within a single environment ministry with its own voice at the cabinet table would be a more effective approach.

The modernization of Chile's environmental management system will require the completion of a major overhaul of existing environmental legislation as well as the development of new standards and regulations. In the past, there was little coherence in the development or consistency in the application of environmental laws and standards across ministries. Chile has literally hundreds of environmental laws on the books. Many of these laws are obsolete, unenforceable, contradictory or duplicative. In many cases regulations do not fulfil the intent of the law or are lacking altogether. New, up-to-date legislation is required to address some environmental problems. (For example, current legislation of industrial and domestic wastes discharged into water bodies could be improved.)

Chile is working to improve its enforcement regime. Responsibility for enforcement of environmental laws is spread throughout various government ministries and their agencies, the police force, and municipal governments. Resources, including qualified personnel, to conduct inspections, collect and analyse data, are limited across these agencies.

Canada-Chile Agreement on Environmental Cooperation

International commitments can be a positive force for environmental protection in Chile. The Canada-Chile Agreement on Environmental Cooperation, which is based

on the NAFTA environmental side agreement, will have a positive impact. It promotes openness, transparency, and accountability. The Agreement contains an explicit commitment to effectively enforce environmental laws. Moreover, it provides specific remedies that can be used by citizens, non-government organizations, and the Governments of Canada and Chile to ensure the effective enforcement of environmental laws. In Chile, this commitment has created the political momentum required to modernize its environmental laws. Chile has committed to complete this task within two years of the entry into force of the Agreement.

The Canada-Chile Agreement on Environmental Cooperation also contains a commitment to cooperate on environmental matters, building on ongoing cooperative initiatives. The annual program of work, to be undertaken according to the Agreement, will promote joint initiatives in areas of mutual concern. It will facilitate access to expertise that will assist Chile in strengthening its environmental management capabilities.

Previous | **Index**

Chilean National Secretariat

What's New
Canada-Chile Agreement
Canada-Chile Commission
Cooperative Activities
Canadian Implementation
FAQs
Publications
Citizen Submissions

Table of Content

ENVIRONMENTAL MANAGEMENT IN CHILE - REPORT
November 1996

APPENDIX A

DESCRIPTION OF THE KEY CHILEAN LAWS PERTAINING TO THE ENVIRONMENT

This section lists the key Chilean laws that pertain to the environment and describes some aspects of these laws. Descriptions are not intended to be comprehensive. In most cases they do not convey the full intent of the law. Rather, they are intended to provide an indication of the environmental relevance of a law. The laws are organized according to the following categories: general, air, water, toxics and hazardous wastes, noise, wildlife and miscellaneous.

GENERAL

Political Constitution of the Republic *(Constitución Política de la República)*

Establishes the right to live in an unpolluted environment as a fundamental right of all Chileans. Authorizes the enactment of laws to protect the environment even if they restrict property ownership or economic activities.

Law No. 19,300, Fundamental Environmental Law *(Ley N· 19.300 de Bases del Medio Ambiente)*

Provides the basis for the organization of environmental laws in Chile. Establishes the mandate of the National Environment Commission (CONAMA). Establishes basic principles of environmental management, including those related to public participation, environmental education and environmental liability, calls for the coordinated development of environmental standards and authorizes a number of management instruments, including the environmental impact assessment system and management, pollution prevention and decontamination plans.

Supreme Decree No. 86, 1995, Ministry of the Secretary General of the Presidency, Regulation on the Advisory Board of the National Environmental Commission and the Regional Environmental Commissions *(Decreto Supremo N· 86, 1995, del Ministerio Secretaría General de la Presidencia, Reglamento del Consejo Consultativo de la Comisión Nacional del Medio Ambiente y de las Comisiones Regionales del Medio Ambiente)*

Establishes the composition, organization and functions of CONAMA, including CONAMA's regional offices (COREMAs).

Supreme Decree No. 93, 1995, Ministry of the Secretary General of the Presidency, Regulation issuing environmental quality standards *(Decreto Supremo N· 93, 1995, del Ministerio Secretaría General de la Presidencia, Reglamento para la Dictación de Normas de Calidad Ambiental)*

Regulates the process for developing and revising environmental standards,

including standards related to emissions.

Supreme Decree No. 94, 1995, Ministry of the Secretary General of the Presidency, Regulation establishing the procedure and stages for preparing prevention and decontamination plans *(Decreto Supremo N· 94, 1995, del Ministerio Secretaría General de la Presidencia, Reglamento que Fija el Procedimiento y Etapas para establecer Planes de Prevención y de Descontaminación)*

Establishes the procedure for the preparation, analysis and approval of pollution prevention and decontamination plans.

Law No. 19,175 respecting the constitutional organization of regional government and administration *(Ley N· 19.175, Orgánica Constitucional sobre Gobierno y Administración Regional)*

Establishes the authority and function of regional governments, including the administration of national assets for public use and the enactment of communal master plans. Authorizes regional governments to enforce some environment-related laws.

Law No. 18,695 respecting the organization of municipalities *(Ley N· 18.695, Orgánica Constitucional de Municipalidades)*

Empowers the municipal works department in each municipality to enforce the legal and technical standards necessary to prevent environmental deterioration.

Mining Code *(Código de Minería)*

Establishes legal standards regulating mine ownership, a system of concessions and includes definitions, requirements, procedures, rights and obligations and taxes.

General Urban Planning and Construction Act, approved by Statutory Decree No. 458, 1976, Ministry of Housing and Urban Planning *(Ley General de Urbanismo y Construcciones, aprobada mediante el Decreto con Fuerza de Ley N· 458, 1976, del Ministerio de Vivienda y Urbanismo)*

Requires that the approval of municipal permits for capital projects and, in general, for the development of any activity, must consider land uses stipulated in the respective communal master plan in setting appropriate standards for construction, building heights, sanitation and safety. Grants municipalities the authority to establish deadlines within which industrial establishments or storage facilities that produce noise, disturbing to neighbouring areas, must leave the sector in which they are located.

Supreme Decree No. 47, 1992, Ministry of Housing and Urban Planning, setting out the revised General Ordinance of the General Urban Planning and Construction Act *(Decreto Supremo N· 47, 1992, del Ministerio de Vivienda y Urbanismo, que fija el Nuevo Texto de la Ordenanza General de la Ley General de Urbanismo y Construcciones)*

Establishes general standards which must be observed in issuing the respective communal master plans. Requires that each master plan prohibit or restrict construction where there is potential for hazard to human settlements.

Supreme Decree No. 447, 1991, Ministry of External Relations, promulgating the framework agreement signed in Rome in 1990 between the Government of the Republic of Chile and the European Economic Community *(Acuerdo Marco entre el Gobierno de la República de Chile y la Comunidad Económica* Europea, suscrito en Roma, 1990, promulgado por Decreto Supremo N· 447, 1991, del Ministerio de Relaciones Exteriores)

Promotes international cooperation for the protection of the environment, against soil, air and water pollition, and the wise use of natural resources.

Environmental Treaty and Protocols between Chile and Argentina, signed in Buenos Aires in 1991 and enacted by Supreme Decree No. 67, 1993, Ministry of External Relations *(Tratado entre la República de Chile y la República de Argentina sobre Medio Ambiente, y sus Protocolos, suscritos en Buenos Aires en 1991, promulgados por Decreto Supremo N· 67, 1993, del Ministerio de Relaciones Exteriores)*

Calls for coordinated or joint actions between Chile and Argentina with regard to the protection, conservation and preservation of the environment, rational use of natural resources, and wise use of water resources.

Law No. 18,378, on soil, forest and water conservation districts *(Ley N· 18.378, sobre distritos de conservación de suelos, bosques y aguas)*

Decree Law No. 3557, 1981, establishing agricultural protection standards *(Decreto Ley N· 3.557, 1981, que establece normas sobre protección agrícola)*

Purpose is to prevent pollution from agricultural activities. Establishes standards and competent authorities to prevent air pollution. Authorizes the President of the Republic to order the total or partial cessation of handicraft, industrial, manufacturing and mining activities and other activities that emit smoke, dust or gases into the air; dump products or waste in to water bodies where this is determined harmful to the health of inhabitants; alter agricultural conditions in soils; or damage the health, life, integrity or development of plants and animals. Establishes standards to prevent soil pollution caused by agricultural activities. Establishes rules related to the destruction, treatment or processing of garbage, weeds and other materials that may endanger agricultural activities.

Supreme Decree No. 4740, 1947, Ministry of the Interior, establishing minimum municipal health standards *(Decreto Supremo N· 4.740, 1947, del Ministerio del Interior, que establece las Normas Sanitarias Mínimas Municipales)*

AIR

Law No. 18,290 on Traffic *(Ley N· 18.290, Ley de Tránsito)*

Establishes restrictions requiring that motorized vehicles be equipped so that emissions are no greater than specified levels. Vehicles not in compliance may be removed from circulation by the police. (See also noise.)

Law No. 18,696 on Transportation of Passengers within Chile *(Ley N· 18.696, sobre Transporte Nacional de Pasajeros)*

Restricts the use of certain types of vehicles causing environmental damage.

Supreme Decree No. 167, 1984, Ministry of Transport and Telecommunications, on pollution control for roadworthiness check of motor vehicles *(Decreto Supremo N· 167, 1984, del Ministerio de Transportes y Telecomunicaciones, sobre control de emisión de contaminantes en la revisión técnica de los vehículos motorizados)*

Establishes a technical and physical inspection of vehicles, including inspection of emissions levels.

Supreme Decree No. 24, 1989, Ministry of Transport and Telecommunications, on roadworthiness check and pollution control of buses and taxis *(Decreto Supremo N· 24, 1989, del Ministerio de Transportes y Telecomunicaciones, sobre revisión técnica y verificación de la emisión de contaminantes de buses y taxibuses)*

Establishes a technical review and verification of emissions from buses and taxibuses.

Supreme Decree No. 75, 1987, Ministry of Transport and Telecommunications, on air pollution caused by transportation of dry commodities and odorous substances *(Decreto Supremo N· 75, 1987, del Ministerio de Transportes y Telecomunicaciones, sobre la contaminación atmosférica causada por el transporte de áridos y sustancias odoríferas)*

Establishes requirements for transporting cargo in specified vehicles.

Supreme Decree No. 94, 1991, Ministry of Transport and Telecommunications, on transportation of forest resources *(Decreto Supremo N· 94, 1991, del Ministerio de Transportes y Telecomunicaciones, sobre transporte de recursos forestales)*

Establishes conditions for the transport of forestry products and their disposition in air and soil.

Supreme Decree No. 116, 1992, Ministry of Transport and Telecommunications, prohibiting operation of public transit vehicles that cause air pollution *(Decreto Supremo N· 116, 1992, del Ministerio de Transportes y Telecomunicaciones, que prohibe operar vehículos de locomoción colectiva que causan contaminación atmosférica)*

Supreme Decree No. 211, 1991, Ministry of Transport and Telecommunications, regulating air pollution caused by light motor vehicles *(Decreto Supremo N· 211, 1991, del Ministerio de Transportes y Telecomunicaciones, que regula la contaminación atmosférica causada por vehículos motorizados livianos)*

Establishes emissions standards for new motor vehicles, distinguishing between passenger and commercial vehicles, in Regions V and VI.

Supreme Decree No. 82, 1993, Ministry of Transport and Telecommunications, establishing emission standards for vehicles to be used in public transit services *(Decreto Supremo N· 82, 1993, del Ministerio de Transportes y Telecomunicaciones, que establece normas de emisión para vehículos destinados a prestación de servicios de locomoción colectiva)*

Establishes emissions standards for CO, HC, NO and PM for diesel buses in the Metropolitan Region.

Supreme Decree No. 212, 1992, Ministry of Transport and Telecommunications, regulating public transport of passengers, establishing roadworthiness checks and emission standards in bus terminals *(Decreto Supremo N· 212, 1992, del Ministerio de Transportes y Telecomunicaciones, que regula el transporte público de pasajeros, establece revisiones técnicas y normas de emisión en terminales de buses)*

Supreme Decree No. 4, 1994, Ministry of Transport and Telecommunications, establishing pollution emission standards for motor vehicles and specifying pollution control procedures *(Decreto Supremo N· 4, 1994, del Ministerio de Transportes y Telecomunicaciones, que establece normas de emisión de contaminantes aplicables a los vehículos motorizados y fija los procedimientos para su control)*

Supreme Decree No. 54, 1994, Ministry of Transport and Telecommunications, establishing emission standards for medium-sized motor vehicles *(Decreto Supremo N· 54, del Ministerio de Transportes y Telecomunicaciones, que establece normas de emisión aplicables a vehículos motorizados medianos)*

Supreme Decree No. 55, 1994, Ministry of Transport and Telecommunications, establishing emission standards for heavy motor vehicles ***(Decreto Supremo N· 55, 1994, del Ministerio de Transportes y Telecomunicaciones, que establece normas de emisión aplicables a vehículos motorizados pesados)***

Supreme Decree No. 145, 1991, Ministry of Transport and Telecommunications, regulating the operation of public transit in the Metropolitan Region ***(Decreto Supremo N· 145, 1991, del Ministerio de Transportes y Telecomunicaciones, que regula el funcionamiento de la locomoción colectiva en la Región Metropolitana)***

Regulates pollution from buses, or «collectives», in Santiago.

Supreme Decree No. 185, 1991, Ministry of Health, specifying primary and secondary environmental quality standards for sulfur dioxide and particulate matter and establishing measurement procedures ***(Decreto Supremo N· 185, 1991, del Ministerio de Salud, que fija normas de calidad ambiental primarias y secundarias, para anhídrido sulfuroso y material particulado y establece procedimientos de medición)***

Establishes primary and secondary air quality standards for particulate matter and sulfur dioxide. Classifies air quality zones as saturated, latent, non-saturated and undetermined. Regulates the operation of establishments and sources that emit suplfur dioxide, particulate matters and arsenic. (The ambient quality standards established by this Supreme Decree are partially derogated, in specific instances, by pollution prevention and decontamination plans.)

Resolution No. 1215, 1978, Ministry of Health, establishing standards for prevention, inspection and control of air pollution ***(Resolución N· 1.215, 1978, del Ministerio de Salud, que establece normas sobre prevención, fiscalización y control de contaminación atmosférica)***

Regulates maximum concentrations for the following contaminants: PTS, PM10, SO2, CO, O3, and NO2.

Resolution No. 369, 1988, Ministry of Health, establishing air quality index to determine level of air pollution in the Metropolitan Region ***(Resolución N· 369, 1988, del Ministerio de Salud, que establece el índice de calidad del aire para determinar el nivel de contaminación atmosférica de la Región Metropolitana)***

Establishes the air quality index for the Metropolitan Region based on concentrations of SO2, CO, O3, and NO2.

Supreme Decree No. 32, 1990, Ministry of Health, approving rules of operation for sources of air pollution in emergency air pollution situations in the Metropolitan Region ***(Decreto Supremo N· 32, 1990, del Ministerio de Salud, que aprueba el reglamento de funcionamiento de fuentes emisoras de contaminantes atmosféricos que indica en situaciones de emergencia de contaminación atmosférica para la Región Metropolitana)***

Applicable in the Metropolitan Region. Classifies air pollution situations according to the level of atmospheric concentrations as ·pre-emergency° or ·emergency°. Gives authorities the ability to suspend the operation of 20% of the most polluting stationary sources and 50% of all sources for 24 hours, to protect public health. Establishes maximum allowable air emissions for different fuels used by sources emitting particulate.

Supreme Decree No. 811, 1993, Ministry of Health, prohibiting operation of fireplaces for heating unless equipped with double chamber or mechanisms to catch particles in homes and establishments in the Metropolitan Region ***(Decreto Supremo N· 811, 1993, del Ministerio de Salud, que prohibe la operación de chimeneas para calefacción que no estén provistas de doble cámara o mecanismos de captación de partículas en viviendas y***

establecimientos de la Región Metropolitana)

Prohibits the operation of open hearth heaters not equipped with a double chamber system or devices for capturing particles, in private homes and public and private establishments in Metropolitan Santiago.

Supreme Decree No. 4, 1992, Ministry of Agriculture, regulating particulate air pollution in the Huasco River Valley *(Decreto Supremo N· 4, 1992, del Ministerio de Agricultura, que regula la contaminación atmosférica de origen particulado en el Valle del Río Huasco)*

The Huasco River Valley is in Region III.

Supreme Decree No. 180, 1994, Ministry of the Secretary General of the Presidency, establishing clean-up plan for Paipote foundry *(Decreto Supremo N· 180, 1994, del Ministerio Secretaría General de la Presidencia, que establece Plan de Descontaminación para la fundición de Paipote)*

The Paipote foundry is in Region III.

Supreme Decree No. 132, 1993, Ministry of Mines, establishing clean-up plan for Chuquicamata foundry *(Decreto Supremo N· 132, 1993, del Ministerio de Minería, que establece Plan de Descontaminación para la fundición de Chuquicamata)*

Focuses primarily on particulate matter and sulfur dioxide.

Supreme Decree No. 252, 1992, Ministry of Mines, establishing clean-up plan for Ventanas foundry and Chilgener thermo-electric plant *(Decreto Supremo N· 252, 1992, del Ministerio de Minería, que establece Plan de Descontaminación para la fundición de Ventanas y Central Termoeléctrica de Chilgener)*

Focuses primarily on particulate matter and sulfur dioxide.

Supreme Decree No. 28, 1991, Ministry of Agriculture, establishing clean-up plan for Chagres foundry *(Decreto Supremo N· 28, 1991, del Ministerio de Agricultura, que establece Plan de Descontaminación para la fundición de Chagres)*

Focuses primarily on particulate matter and sulfur dioxide.

Supreme Decree No. 179, 1994, Ministry of the Secretary General of the Presidency, declaring the area around Caletones foundry to be saturated with sulfur dioxide and particulates *(Decreto Supremo N· 179, 1994, del Ministerio Secretaría General de la Presidencia, que declara zona saturada por anhídrido sulfuroso y material particulado al área circundante a la fundición Caletones)*

Supreme Decree No. 2467, 1994, Ministry of Health, approving regulations for laboratories that measure and analyze atmospheric emissions from stationary sources *(Decreto Supremo N· 2.467, 1994, del Ministerio de Salud, que aprueba el Reglamento de laboratorios de medición y análisis de emisiones atmosféricas provenientes de fuentes estacionarias)*

Regulates how laboratories, measuring and analyzing air emissions, are classified, including determination of services to be provided, applications to be submitted and evaluation procedures to be fulfilled.

Vienna Convention for the Protection of the Ozone Layer and its annexes I and II, adopted on March 22, 1985 and approved by Supreme Decree No. 719, 1990, Ministry of External Relations, and the Montreal Protocol, 1987, enacted by Supreme Decree No. 238, 1990, Ministry of External Relations *(Convenio de*

Viena para la Protección de la Capa de Ozono y sus anexos I y II, adoptado el 22 de marzo de 1985, aprobado por Decreto Supremo N· 719, 1990, del Ministerio de Relaciones Exteriores, y su Protocolo de Montreal de 1987, promulgado por Decreto Supremo N· 238, 1990, del Ministerio de Relaciones Exteriores)

Supreme Decree No. 4, 1992, Ministry of Health, establishing particulate emission standards for individual and grouped stationary sources *(Decreto Supremo N· 4, 1992, del Ministerio de Salud, que establece norma de emisión de material particulado a fuentes estacionarias puntuales y grupales)*

Applicable in the Metropolitan Region. Requires stationary sources to measure their emissions. Establishes the maximum allowable concentrations of particulate which may be emitted. Qualifies emissions of gases and particulate which may only be carried out through chimney or ducts.

Supreme Decree No. 812, 1995, Ministry of Health, complementing the compensation procedure for emissions from individual stationary sources *(Decreto Supremo N· 812, 1995, del Ministerio de Salud, que complementa el procedimiento de compensación de emisiones para fuentes estacionarias puntuales)*

Establishes the procedures which must be followed by owners of individual stationary sources who are required to request and obtain authorization for the compensation of emissions.

Supreme Decree No. 1905, 1993, Ministry of Health, establishing particulate emission standards for existing multiple heating furnaces in the Metropolitan Region *(Decreto Supremo N· 1.905, 1993, del Ministerio de Salud, que establece normas de emisión de material particulado para calderas de calefacción grupales existentes en la Región Metropolitana)*

Establishes standards for emissions of particulate from grouped heating boilers.

Supreme Decree No. 1583, 1992, Ministry of Health, establishing a particulate emission standard for very large stationary sources in the Metropolitan Region *(Decreto Supremo N· 1.583, 1992, del Ministerio de Salud, que establece una norma de emisión de material particulado a megafuentes estacionarias de la Región Metropolitana)*

Regulates emissions from individual stationary sources. Establishes maximum concentrations of emission by cubic metre. Establishes time frames for reduction of emissions according to the quantity of particulate per cubic metre.

Resolution No. 15,027, 1994, Metropolitan Region Environmental Health Service, Ministry of Health, establishing the emission reporting procedure for stationary sources in the Metropolitan Region *(Resolución N· 15.027, 1994, del Servicio de Salud del Ambiente de la Región Metropolitana, del Ministerio de Salud, que establece el procedimiento de declaración de emisiones para fuentes estacionarias de la Región Metropolitana)*

Requires owners of individual or grouped stationary sources to report emissions to the Ministry of Health at least once per year.

Sanitary Code (Article 89(a)) *(Código Sanitario (artículo 89(a)))*

Article 89 concerns the competence of authorities with regard to environmental protection.

Supreme Decree No. 144, 1961, Ministry of Health, establishing regulations to prevent air pollution of any kind *(Decreto Supremo N· 144, 1961, del Ministerio de Salud, que establece el Reglamento para evitar emanaciones o*

***contaminantes atmosféricos de cualquier naturaleza*)**

Prohibits emissions of pollutants of any nature that are harmful or disturbing to the surrounding area. Prohibits the open-air incineration of any waste within city limits. (A very general law which has been superseded by more precise laws in some instances.)

WATER

Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, with Annexes I, II and III, 1972, enacted under Supreme Decree No. 476, 1977, Ministry of External Relations *(Convenio sobre Prevención de la Contaminación del Mar por Vertimiento de Desechos y otras materias, con sus anexos I, II y III del año 1972, promulgado mediante Decreto Supremo N· 476, 1977, del Ministerio de Relaciones Exteriores)*1.c.1

Enforced by the Navy in Chile.

International Convention for the Prevention of Pollution of the Sea by Oil, 1954, amended in 1962 and 1969, and an annex on the hydrocarbons register enacted under Supreme Decree No. 474, 1977, Ministry of External Relations *(Convenio Internacional para Prevenir la Contaminación de las Aguas del Mar por Hidrocarburos, de 1954, con sus enmiendas de 1962 y 1969 y un anexo sobre Libro de Registro de Hidrocarburos, promulgado mediante el Decreto Supremo N· 474, 1977, del Ministerio de Relaciones Exteriores)*

Enforced by the Navy in Chile.

International Convention on Civil Liability for Oil Pollution Damage, with 1969 annex, enacted under Supreme Decree No. 475, 1977, Ministry of External Relations *(Convenio Internacional sobre Responsabilidad Civil por Daños causados por la Contaminación de las Aguas del Mar por hidrocarburos, con su Anexo de 1969, promulgado por el Decreto Supremo N· 475, 1977, del Ministerio de Relaciones Exteriores)*

Convention for the Protection of the Marine Environment and Coastal Area of the Southeast Pacific, enacted by Supreme Decree No. 296, 1986, Ministry of External Relations *(Convenio para la Protección del Medio Ambiente y la Zona Costera del Pacífico Sudeste, promulgado mediante el Decreto Supremo N· 296, 1986, del Ministerio de Relaciones Exteriores)*

Agreement on Regional Cooperation in Combatting Pollution of the Southeast Pacific by Oil and Other Harmful Substances in Cases of Emergency, enacted under Supreme Decree No. 425, 1986, Ministry of External Relations *(Acuerdo sobre la Cooperación Regional para el Combate contra la Contaminación del Pacífico Sudeste por Hidrocarburos y Otras Sustancias Nocivas en Casos de Emergencia, promulgado por el Decreto Supremo N· 425, 1986, del Ministerio de Relaciones Exteriores)*

Protocol for the Protection of the Southeast Pacific from Pollution caused by Land-based Sources, and its annexes, enacted under Supreme Decree No. 295, Ministry of External Relations *(Protocolo para la Protección del Pacífico Sudeste contra la Contaminación Proveniente de Fuentes Terrestres y sus anexos, promulgado mediante el Decreto Supremo N· 295, del Ministerio de Relaciones Exteriores)*

Complementary Protocol to the Agreement on Regional Cooperation in Combatting Pollution of the Southeast Pacific by Oil and Other Harmful Substances in Cases of Emergency, enacted under Supreme Decree No. 656, 1986, Ministry of External Relations *(Protocolo Complementario del Acuerdo sobre la Cooperación Regional para el Combate contra la Contaminación del Pacífico Sudeste por Hidrocarburos y Otras Sustancias Nocivas en Casos de Emergencias promulgado por el Decreto Supremo N· 656, 1986, del Ministerio*

de Relaciones Exteriores)

Decree Law No. 2222, 1978, Navigation Act *(Decreto Ley N· 2.222, 1978, Ley de Navegación)*

Confers on maritime authorities responsibility for applying and verifying compliance with international treaties related to the preservation of marine ecology. Presumes that dumping of hazardous substances produces ecological damage. Prohibits any form of spill or dumping that causes damage to water bodies under national jurisdiction and establishes authorities to prevent this pollution. Considers owners of land-based facilities responsible for dumping substances into the marine environment.

Supreme Decree No. 1, 1992, Ministry of National Defence (Navy), Water Pollution Regulations *(Decreto Supremo N· 1, 1992, del Ministerio de Defensa Nacional (Marina), Reglamento de la Contaminación Acuática)*

Establishes standards for prevention, monitoring and combatting water pollution in oceans, ports, rivers and lakes under national jurisdiction. Obliges all industrial activities to submit an environmental impact assessment when discharging wastes into an aquatic environment under national jurisdiction. Enforced by the Navy.

Supreme Decree No. 263, 1985, Ministry of Health, establishing sanitary regulations for the sea, the air and border areas *(Decreto Supremo N· 263, de 1985, del Ministerio de Salud, que establece el Reglamento de Sanidad Marítima, Aérea y de las Fronteras)*

Resolution No. 12,600/322 VRS/94, DIRECTEMAR, regulating dumping of liquid waste into waters under DIRECTEMAR's jurisdiction *(Resolución N· 12.600/322 VRS/94 de DIRECTEMAR, que regula las descargas de residuos líquidos a los cuerpos de agua bajo la jurisdicción de la DIRECTEMAR)*

Resolution No. 12,600/323 VRS/94, DIRECTEMAR, establishing terms of reference for aquatic environmental impact studies on dumping of liquid waste in bodies of water under DIRECTEMAR's jurisdiction *(Resolución N· 12.600/323 VRS/94 de DIRECTEMAR, que establece términos de referencia para la realización de estudios de evaluación de impacto ambiental acuático para descarga de residuos líquidos a los cuerpos de agua bajo la jurisdicción de la DIRECTEMAR)*

Resolution No. 12,600/324 VRS/94, DIRECTEMAR, establishing terms of reference for environmental impact studies on projects to dump dredging waste in waters under DIRECTEMAR's jurisdiction *(Resolución N· 12.600/324 VRS/94 de DIRECTEMAR, que establece términos de referencia para la realización de estudios de evaluación de impacto ambiental para proyectos de vertimiento de desechos de dragados en el medio ambiente acuático bajo la jurisdicción de la DIRECTEMAR)*

Resolution No. 12,600/325 VRS/94, DIRECTEMAR, establishing terms of reference for aquatic environmental impact studies for ports and marine terminals under DIRECTEMAR's jurisdiction *(Resolución N· 12.600/325 VRS/94 de DIRECTEMAR, que establece términos de referencia para la realización de estudios de evaluación de impacto ambiental acuático para puertos y terminales marítimos bajo la jurisdicción de la DIRECTEMAR)*

Resolution No. 186, 1996, Waters Branch, Ministry of Public Works, establishing standards for exploration and exploitation of underground waters *(Resolución N· 186, 1996, de la Dirección General de Aguas del Ministerio de Obras Públicas, que establece las normas sobre exploración y explotación de aguas subterráneas)*

Establishes standards aimed at protecting aquifers from pollution and depletion of water stocks by establishing prohibited, restricted and seasonally-restricted zones.

Supreme Decree No. 236, 1926, former Ministry of Health, Welfare, Social Security and Labor, establishing general regulations for household sewers ***(Decreto Supremo N· 236, de 1926, del ex Ministerio de Higiene, Asistencia, Previsión Social y Trabajo, que establece el Reglamento General de Alcantarillados Particulares)***

Regulates the disposal of household sewage in buildings of any nature in rural or urban locations where there is no public sewage network.

Supreme Decree No. 288, 1969, Ministry of Health, approving regulations on primary treatment system for waste water, using prefabricated septic tanks ***(Decreto Supremo N· 288, de 1969, de Ministerio de Salud, que aprobó el Reglamento sobre Sistema de Tratamiento Primario de Aguas Servidas Mediante Estanques Sépticos Pre-fabricados)***

Supreme Decree No. 867, 1978, Ministry of Public Works, setting forth Chilean Standard NCh 1333 on quality requirements for water for various uses ***(Decreto Supremo N· 867, 1978, del Ministerio de Obras Públicas, que fija la norma chilena NCh 1.333, sobre requisitos de calidad del agua para diferentes usos)***

Establishes water quality requirements for the following uses: human consumption, consumption by animals, irrigation, recreation, and aquatic life. (Establishes water quality objectives in the form of a technical standard used as the basis for authorization. Enforced through permits.)

Water Code ***(Código de Aguas)***

Regulates the water system, establishing the conditions under which bodies of water may be used and developed, taking into account that they are national assets for public use. Establishes special procedures, deadlines, rights and obligations to this end. Stipulates, as applicable, the conditions for the use and development of bodies of water considered to be national assets for public use and not for private ownership. Regulates the transport of water through populated areas where inhabitants may be affected by harmful emissions and, in general, prohibits the dumping of garbage that could alter water quality.

Statutory Decree No. 34, 1931, on fishing industry and its products ***(Decreto con Fuerza de Ley N· 34, 1931, sobre la industria pesquera y sus derivados)***

Regulates the fishing industry and derived products. (Only articles III and VI are in force.)

Law No. 18,892, Fisheries and Aquiculture Law ***(Ley N· 18.892, General de Pesca y Acuicultura)***

Establishes, where applicable, fisheries administration measures to protect hydrobiological species. Establishes rights, obligations and responsibilities of bearers of aquiculture concessions or permits for sections of water or seabed, to maintain cleanliness and ecological equilibrium which could be altered by aquicultural activity. Monitors the preservation of hydrobiological resources and all fishing activity involving extraction, aquiculture and research, as well as sports fishing, carried out in inland waters and other bodies of water under national jurisdiction. (See also wildlife.)

Law No. 3133, 1916, on neutralization of wastes from industrial establishments (Liquid Industrial Wastes) (RILES) ***(Ley N· 3.133, 1916, sobre neutralización de los residuos provenientes de establecimientos industriales (Residuos Industriales Líquidos (RILES))***

Prohibits industrial establishments from dumping wastewater containing harmful substances into water supply systems and artificial or natural channels through which springs, lakes and other waters flow, without the prior neutralization or

purification of that waste.

Supreme Decree No. 351, 1992, Ministry of Public Works, approving regulations for neutralizing and purifying liquid industrial wastes ***(Decreto Supremo N· 351, 1992, del Ministerio de Obras Públicas, que aprueba el Reglamento para la neutralización y depuración de los residuos líquidos industriales)***

Establishes regulations pursuant to Law No. 3133.

Sanitary Code (Articles 69 and 76) ***(Código Sanitario (artículos 69 y 76)***

Law No. 18,902 creating the office of Superintendent of Health Services ***(Ley N· 18.902, que crea la Superintendencia de Servicios Sanitarios)***

Creates the Superintendent of Health Services and establishes its duties. Grants the Superintendent the authority to inspect sanitation services providers and verify compliance with standards governing these services, particularly with respect to control of waste water.

Supreme Decree No. 745, 1993, Ministry of Health, concerning liquid industrial wastes (RILES) ***(Decreto Supremo N· 745, 1993, del Ministerio de Salud en lo relativo a residuos líquidos industriales (RILES))***

For liquid industrial wastes, regulates the maximum allowable environmental concentrations of polluting substances and maximum limits for exposure to physical agents in the work place and maximum allowable risks to workers.

Statutory Decree No. 208, 1953, Ministry of Agriculture, prohibiting dumping into waters on land and at sea liquid and solid industrial wastes unless they have first been purified or diluted ***(Decreto con Fuerza de Ley N· 208, 1953, del Ministerio de Agricultura, que prohibe arrojar a los cuerpos y cursos de aguas continentales y marítimas, residuos industriales líquidos y sólidos, sin previa purificación o dilución)***

Prohibits the discharge of noxious substances from industries into the sea, rivers or lakes without prior purification or dilution, to protect aquatic life.

General Sanitary Services Act, approved under Statutory Decree No. 382, 1988, Ministry of Public Works ***(Ley General de Servicios Sanitarios, aprobada mediante el Decreto con Fuerza de Ley N· 382, 1988, del Ministerio de Obras Públicas***

TOXICS AND HAZARDOUS WASTES

Law No. 18,164, establishing customs standards and modifying legislation on toxic and hazardous substances ***(Ley N· 18.164, que establece Normas de Carácter Aduanero y modifica Legislación Pertinente, respecto de sustancias tóxicas y peligrosas para la Salud)***

Establishes procedures for the protection of health from toxic or hazardous substances.

Statutory Decree No. 1, 1989, Ministry of Health, specifying that explicit permission from health authorities is required to dispose of waste ***(Decreto con Fuerza de Ley N· 1, 1989, del Ministerio de Salud, que dispone que requieren de autorización sanitaria expresa, la disposición de residuos)***

Defines activities for which specific authorization is required from the Ministry of Health for the disposition of waste, including the installation and operation of crematoriums and incinerators for biological waste.

Supreme Decree No. 86, 1970, Ministry of Mines, regulations for the construction and operation of sludge reservoirs *(Decreto Supremo N· 86, 1970, del Ministerio de Minería, Reglamento de construcción y operación de Tanques de Relave)*

Regulates the construction and operation of sludge reservoirs to ensure secure storage. (Relevant to the management of hazardous wastes from mining activities.)

Supreme Decree No. 12, 1985, Ministry of Mines, on transport of radioactive materials *(Decreto Supremo N· 12, 1985, del Ministerio de Minería, sobre transporte de materiales radioactivos)*

Establishes the conditions for the shipment of radioactive materials by all means, including by air, provided that such radioactive materials do not form an integral part of the means of transport.

Supreme Decree No. 746, 1989, Ministry of National Defence (Air Force), on air transport of hazardous goods *(Decreto Supremo N· 746, 1989, del Ministerio de Defensa Nacional (Aviación), sobre transporte de mercaderías peligrosas por vía aérea)*

Regulations pursuant to the Aviation Code.

Supreme Decree No. 777, 1983, Ministry of National Defence, approving Chilean regulations to implement the International Marine Code on Hazardous Goods *(Decreto Supremo N· 777, de 1983, del Ministerio de Defensa Nacional, que aprueba el Reglamento de la República para el Código Marítimo Internacional de Mercaderías Peligrosas)*

Supreme Decree No. 298, 1994, Ministry of Transport and Telecommunications, on transport of hazardous goods on public thoroughfares *(Decreto Supremo N· 298, 1994, del Ministerio de Transporte y Telecomunicaciones, sobre transporte de cargas peligrosas por calles y caminos)*

Supreme Decree No. 278, 1982, Ministry of Economic Affairs, approving regulations on the safe storage, refining, transport and distribution of liquid petroleum-based fuels *(Decreto Supremo N· 278, de 1982, del Ministerio de Economía, que aprueba el Reglamento de seguridad para el almacenamiento, refinación, transporte y expendio de combustibles líquidos derivados del petróleo)*

Establishes requirements which must be followed to avoid accidents that may have serious environmental consequences.

Resolution No. 5081, 1993, Environmental Health Service of the Metropolitan Region, Ministry of Health, on reporting and monitoring solid industrial wastes (RISES) *(Resolución N· 5.081, 1993, del Servicio de Salud del Ambiente de la Región Metropolitana del Ministerio de Salud, sobre declaración y seguimiento de Residuos Industriales Sólidos (RISES))*

Establishes a notification and monitoring system for industrial solid wastes processed in the Metropolitan Region.

Supreme Decree No. 745, 1992, Ministry of Health, on basic sanitary and environmental conditions in work places (regarding accumulation and disposal of solid industrial wastes - RISES) *(Decreto Supremo N· 745, 1992, del Ministerio de Salud, sobre condiciones sanitarias y ambientales básicas en los lugares de trabajo (en cuanto a acumulación y disposición de Residuos Industriales Sólidos - RISES))*

Paragraph 3 addresses the accumulation, treatment and final disposition of solid

industrial wastes.

Resolution No. 2444, 1980, Ministry of Health, minimum health standards for operation of garbage dumps *(Resolución N· 2.444, 1980, del Ministerio de Salud, sobre normas sanitarias mínimas para la operación de basurales)*

Establishes requirements for the operation of dump sites, including location within or outside city limits, abandonment of the site, and removal of materials from the site.

Resolution No. 7539, 1976, Ministry of Health, minimum standards for operation of garbage dumps in Greater Santiago *(Resolución N· 7.539, 1976, del Ministerio de Salud, sobre normas mínimas para la operación de basurales ubicados en el Gran Santiago)*

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, enacted by Supreme Decree No. 685, 1992, Ministry of External Relations *(Convenio de Basilea sobre el Control de los Movimientos Transfronterizos de los Desechos Peligrosos y su Eliminación, promulgado por Decreto Supremo N· 685, 1992, del Ministerio de Relaciones Exteriores)*

Sanitary Code (Articles 78 to 81) *(Código Sanitario (artículos 78 al 81))*

NOISE

Law No. 18,290, Traffic Act *(Ley N· 18.290, Ley de Tránsito)*

Prohibits the use of devices generating sound on vehicles in urban areas, with the exception of vehicles responding to emergency situations. Vehicles not in compliance may be removed from circulation by the police. (See also air.)

Supreme Decree No. 122, 1991, Ministry of Transport and Telecommunications, specifying size and operating requirements for vehicles that provide public urban transit services *(Decreto Supremo N· 122, 1991, del Ministerio de Transporte y Telecomunicaciones, que fija los requisitos dimensionales y funcionales a vehículos que presten servicios de locomoción colectiva urbana)*

Establishes maximum noise levels for vehicles that provide public urban transit services.

Sanitary Code (Article 89(b)) *(Código Sanitario (artículo 89(b)))*

Article 89 concerns the competence of authorities with regard to environmental protection.

Supreme Decree No. 286, 1984, Ministry of Health, approving regulations on maximum allowable limits for noise pollution from stationary sources *(Decreto Supremo N· 286, 1984, del Ministerio de Salud, que aprueba el Reglamento sobre niveles máximos permisibles de ruidos molestos generados por fuentes fijas)*

Regulates maximum allowable levels of sound and establishes technical criteria for evaluating and describing the emission of noise pollution.

WILDLIFE

Law No. 4601, Hunting Act *(Ley N· 4.601, Ley de Caza)*

Establishes provisions applicable to hunting activities. Requires that hunting permits

be obtained and that management measures, such as closed seasons and the prohibition of hunting endangered species, be respected.

Supreme Decree No. 133, 1993, Ministry of Agriculture, Hunting Act Regulations *(Decreto Supremo N· 133, 1993, del Ministerio de Agricultura, Reglamento de la Ley de Caza)*

Regulates hunting seasons, methods, permits, and raising of wild animals. Establishes penalties for non-compliance.

Statutory Decree No. 25, 1963, Ministry of Agriculture, prohibiting hunting of birds that produce manure (*guano*) *(Decreto con Fuerza de Ley N· 25, 1963, del Ministerio de Agricultura, que prohibe la caza de aves guaníferas)*

Supreme Decree No. 268, 1955, Ministry of Agriculture, prohibiting hunting of wild birds during nesting season *(Decreto Supremo N· 268, 1955, del Ministerio de Agricultura, que prohibe la caza de aves silvestres durante su anidación)*

Prohibits the hunting, sale and export of wild birds during nesting season.

Supreme Decree No. 354, 1981, Ministry of Agriculture, indefinitely prohibiting the hunting, transport, sale, possession and processing of red fox or large Chilean fox (*culpeo*), Andean mountain cat, Argentine mountain cat, *guiña*, scrubland cat and puma *(Decreto Supremo N· 354, 1981, del Ministerio de Agricultura, que prohibe indefinidamente la caza, transporte, comercialización, posesión e industrialización de zorro rojo o culpeo, gato montés andino, gato montés argentino, guiña, gato de los pajonales y puma)*

Supreme Decree No. 544, 1992, Ministry of Education, declaring Lobería islands and Lobería Iglesia de Piedra de Cobquecura to be nature sanctuaries *(Decreto Supremo N· 544, 1992, del Ministerio de Educación, que declara santuario de la naturaleza los Islotes de Lobería y Lobería Iglesia de Piedra de Cobquecura)*

Vicuña conservation convention, enacted by Supreme Decree No. 212, 1981, Ministry of External Relations *(Convenio para la conservación de la Vicuña, promulgado por Decreto Supremo N· 212, 1981, del Ministerio de Relaciones Exteriores)*

International Convention for the Regulation of Whaling and annex, signed in Washington, D.C. on December 2, 1946, enacted by Supreme Decree No. 489, 1979, Ministry of External Relations *(Convención Internacional para la Regulación de la Caza de Ballenas y su Anexo, suscrito en Washington, D.C., el 2 de diciembre de 1946, promulgado mediante el Decreto Supremo N· 489, 1979, del Ministerio de Relaciones Exteriores)*

Supreme Decree No. 129, 1971, Ministry of Agriculture, prohibiting the cutting, uprooting, transport, possession and trade of Chile-bells *(Decreto Supremo N· 129, 1971, del Ministerio de Agricultura, que prohibe corta, arranque, transporte, tenencia y comercio de copihues)*

Copihue is the national flower of Chile.

Supreme Decree No. 82, 1974, Ministry of Agriculture, prohibiting cutting of trees and bushes in Andes mountains and foothills of the Province of *(Decreto Supremo N· 82, 1974, del Ministerio de Agricultura, que prohibe la corta de árboles y arbustos en la zona precordillerana y cordillerana andina que señala de la provincia de Santiago)*

Supreme Decree No. 146, 1974, Ministry of Agriculture, prohibiting cutting of trees and bushes on land in the Province of Aysén *(Decreto Supremo N· 146,*

1974, del Ministerio de Agricultura, que prohibe la corta de árboles y arbustos que se encuentran situados dentro de los terrenos de la Provincia de Aysén)

Supreme Decree No. 103, 1935, former Ministry of Lands and Colonization, prohibiting cutting of tucuma palms, arboreal ferns and *toromiro* *(Decreto Supremo N· 103, 1935, del ex Ministerio de Tierras y Colonización, que prohibe cortar la palma Chonta, Helechos Arbóreos y el Toromiro)*

Law No. 17,288 on national monuments *(Ley N· 17.288, sobre Monumentos Nacionales)*

Regulates, among other aspects, the protection of historical, archeological and cultural artifacts and activities carried out on sites designated as Nature Reserves.

Supreme Decree No. 484, 1990, Ministry of Education, establishing regulations pursuant to Law No. 17,288 *(Decreto Supremo N· 484, 1990, del Ministerio de Educación, que establece el Reglamento de la Ley N· 17.288)*

Convention on International Trade in Endangered Species (CITES) of Wild Flora and Fauna, adopted in Washington on March 3, 1973, enacted by Supreme Decree No. 141, 1975, Ministry of External Relations *(Convención sobre Comercio Internacional de especies amenazadas de flora y fauna silvestres, adoptada en Washington el 3 de marzo de 1973, promulgada por Decreto Supremo N· 141, 1975, del Ministerio de Relaciones Exteriores)*

Convention on World Cultural and Natural Heritage, enacted by Supreme Decree No. 259, 1980, Ministry of External Relations *(Convención sobre el Patrimonio Mundial Cultural y Natural, promulgada por Decreto Supremo N· 259, 1980, del Ministerio de Relaciones Exteriores)*

Statutory Decree No. 265, 1931, Ministry of Agriculture, Forest Law *(Decreto con Fuerza de Ley N· 265, 1931, del Ministerio de Agricultura, Ley de Bosques)*

Supreme Decree No. 552, 1926, Ministry of Land and Colonization, creating Vicente Pérez Rosales National Park *(Decreto Supremo N· 552, 1926, del Ministerio de Tierra y Colonización, que crea Parque Nacional Vicente Pérez Rosales)*

Supreme Decree No. 103, 1935, Ministry of Land and Colonization, creating Rapa Nui National Park *(Decreto Supremo N· 103, 1935, del Ministerio de Tierra y Colonización, que crea Parque Nacional Rapa Nui)*

Supreme Decree No. 103, 1935, Ministry of Land and Colonization, creating Juan Fernández Archipelago National Park *(Decreto Supremo N· 103, 1935, del Ministerio de Tierra y Colonización, que crea Parque Nacional Archipiélago Juan Fernández)*

Supreme Decree No. 2489, 1935, Ministry of Land and Colonization, creating Tolhuaca National Park *(Decreto Supremo N· 2.489, 1935, del Ministerio de Tierra y Colonización, que crea Parque Nacional Tolhuaca)*

Supreme Decree No. 15, 1939, Ministry of Land and Colonization, creating Nahuelbuta National Park *(Decreto Supremo N· 15, 1939, del Ministerio de Tierra y Colonización, que crea Parque Nacional Nahuelbuta)*

Supreme Decree No. 374, 1941, Ministry of Land and Colonization, creating Puyehue National Park *(Decreto Supremo N· 374, 1941, del Ministerio de Tierra y Colonización, que crea Parque Nacional Puyehue)*

Supreme Decree No. 339, 1941, Ministry of Land and Colonization, creating Fray Jorge Forest National Park *(Decreto Supremo N· 339, 1941, del Ministerio de Tierra y Colonización, que crea Parque Nacional Bosque Fray Jorge)*

Supreme Decree No. 995, 1945, Ministry of Land and Colonization, creating Cape Horn National Park ***(Decreto Supremo N· 995, 1945, del Ministerio de Tierra y Colonización, que crea Parque Nacional Cabo de Hornos)***

Supreme Decree No. 652, 1958, Ministry of Agriculture, creating Laja Lagoon National Park ***(Decreto Supremo N· 652, 1958, del Ministerio de Agricultura, que crea Parque Nacional Laguna del Laja)***

Supreme Decree No. 475, 1959, Ministry of Agriculture, creating San Rafael Lagoon National Park ***(Decreto Supremo N· 475, 1959, del Ministerio de Agricultura, que crea Parque Nacional Laguna San Rafael)***

Supreme Decree No. 1050, 1962, Ministry of Agriculture, creating Torres del Paine National Park ***(Decreto Supremo N· 1.050, 1962, del Ministerio de Agricultura, que crea Parque Nacional Torres del Paine)***

Supreme Decree No. 80, 1965, Ministry of Agriculture, creating Alberto de Agostini National Park ***(Decreto Supremo N· 80, 1965, del Ministerio de Agricultura, que crea Parque Nacional Alberto de Agostini)***

Supreme Decree No. 4, 1967, Ministry of Agriculture, creating Isluga Volcano National Park ***(Decreto Supremo N· 4, 1967, del Ministerio de Agricultura, que crea Parque Nacional Volcán Isluga)***

Supreme Decree No. 321, 1967, Ministry of Agriculture, creating Guamblin Island National Park ***(Decreto Supremo N· 321, 1967, del Ministerio de Agricultura, que crea Parque Nacional Isla Guamblin)***

Supreme Decree No. 322, 1967, Ministry of Agriculture, creating Simpson River National Park ***(Decreto Supremo N· 322, 1967, del Ministerio de Agricultura, que crea Parque Nacional Río Simpson)***

Supreme Decree No. 347, 1967, Ministry of Agriculture, creating Huerquehue National Park ***(Decreto Supremo N· 347, 1967, del Ministerio de Agricultura, que crea Parque Nacional Huerquehue)***

Supreme Decree No. 264, 1969, Ministry of Agriculture, creating Bernardo O'Higgins National Park ***(Decreto Supremo N· 264, 1969, del Ministerio de Agricultura, que crea Parque Nacional Bernardo O'Higgins)***

Supreme Decree No. 270, 1970, Ministry of Agriculture, creating Lauca National Park ***(Decreto Supremo N· 270, 1970, del Ministerio de Agricultura, que crea Parque Nacional Lauca)***

Supreme Decree No. 271, 1970, Ministry of Agriculture, creating Conguillío National Park ***(Decreto Supremo N· 271, 1970, del Ministerio de Agricultura, que crea Parque Nacional Conguillío)***

Supreme Decree No. 378, 1970, Ministry of Agriculture, creating Paliaike National Park ***(Decreto Supremo N· 378, 1970, del Ministerio de Agricultura, que crea Parque Nacional Paliaike)***

Supreme Decree No. 162, 1974, Ministry of Agriculture, creating El Morado National Park ***(Decreto Supremo N· 162, 1974, del Ministerio de Agricultura, que crea Parque Nacional El Morado)***

Supreme Decree No. 734, 1983, Ministry of National Property, creating Chiloé National Park ***(Decreto Supremo N· 734, 1983, del Ministerio de Bienes Nacionales, que crea Parque Nacional Chiloé)***

Supreme Decree No. 735, 1983, Ministry of National Property, creating Alerce

Andino National Park ***(Decreto Supremo N· 735, 1983, del Ministerio de Bienes Nacionales, que crea Parque Nacional Alerce Andino)***

Supreme Decree No. 301, 1983, Ministry of Agriculture, creating Magdalena Island National Park ***(Decreto Supremo N· 301, 1983, del Ministerio de Agricultura, que crea Parque Nacional Isla Magdalena)***

Supreme Decree No. 640, 1983, Ministry of National Property, creating Queulat National Park ***(Decreto Supremo N· 640, 1983, del Ministerio de Bienes Nacionales, que crea Parque Nacional Queulat)***

Supreme Decree No. 527, 1986, Ministry of National Property, creating Pan de Azúcar (Sugarloaf) National Park ***(Decreto Supremo N· 527, 1986, del Ministerio de Bienes Nacionales, que crea Parque Nacional Pan de Azúcar)***

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Supreme Decree No. 19, 1982, Ministry of Agriculture, creating Clarillo River National Reserve ***(Decreto Supremo N· 19, 1982, del Ministerio de Agricultura, que crea Reserva Nacional Río Clarillo)***

Supreme Decree No. 94, 1982, Ministry of Agriculture, creating Los Ruiles National Reserve ***(Decreto Supremo N· 94, 1982, del Ministerio de Agricultura, que crea Reserva Nacional Los Ruiles)***

Supreme Decree No. 29, 1983, Ministry of Agriculture, creating Las Vicuñas National Reserve ***(Decreto Supremo N· 29, 1983, del Ministerio de Agricultura, que crea Reserva Nacional Las Vicuñas)***

Supreme Decree No. 153, 1984, Ministry of Agriculture, creating Las Chinchillas National Reserve ***(Decreto Supremo N· 153, 1984, del Ministerio de Agricultura, que crea Reserva Nacional Las Chinchillas)***

Supreme Decree No. 127, 1986, Ministry of Agriculture, creating Los Cipreses River National Reserve ***(Decreto Supremo N· 127, 1986, del Ministerio de Agricultura, que crea Reserva Nacional Río de Los Cipreses)***

Supreme Decree No. 128, 1986, Ministry of Agriculture, creating Torca Lagoon National Reserve ***(Decreto Supremo N· 128, 1986, del Ministerio de Agricultura, que crea Reserva Nacional Laguna de Torca)***

Supreme Decree No. 207, 1988, Ministry of Agriculture, creating Pampa del Tamarugal National Reserve ***(Decreto Supremo N· 207, 1988, del Ministerio de Agricultura, que crea Reserva Nacional Pampa del Tamarugal)***

Supreme Decree No. 70, 1988, Ministry of Agriculture, creating Mocha Island National Reserve ***(Decreto Supremo N· 70, 1988, del Ministerio de Agricultura,***

que crea Reserva Nacional Isla Mocha)

Supreme Decree No. 71, 1988, Ministry of Agriculture, creating La Chimba National Reserve *(Decreto Supremo N· 71, 1988, del Ministerio de Agricultura, que crea Reserva Nacional La Chimba)*

Supreme Decree No. 429, 1988, Ministry of National Property, creating Ralco National Reserve *(Decreto Supremo N· 429, 1988, del Ministerio de Bienes Nacionales, que crea Reserva Nacional Ralco)*

Supreme Decree No. 4, 1990, Ministry of Mines, creating Pigüino de Humboldt National Reserve *(Decreto Supremo N· 4, 1990, del Ministerio de Minería, que crea Reserva Nacional Pigüino de Humboldt)*

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Supreme Decree No. 56, 1991, Ministry of Agriculture, creating Galletué National Reserve *(Decreto Supremo N· 56, 1991, del Ministerio de Agricultura, que crea Reserva Nacional Galletué)*

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Supreme Decree No. 89, 1996, Ministry of National Property, creating Radal Siete Tazas National Reserve *(Decreto Supremo N· 89, 1996, del Ministerio de Bienes Nacionales, que crea Reserva Nacional Radal Siete Tazas)*

Supreme Decree No. 59, 1996, Ministry of Agriculture, creating Altos de Lircay National Reserve *(Decreto Supremo N· 59, 1996, del Ministerio de Agricultura, que crea Reserva Nacional Altos de Lircay)*

Supreme Decree No. 490, 1977, Ministry of Agriculture, declaring the *Alerce* or *Lahuén* species of plant to be natural monuments *(Decreto Supremo N· 490, 1977, del Ministerio de Agricultura, que declara monumento natural a la especie vegetal «Alerce» or «Lahuén»)*

Supreme Decree No. 43, 1990, Ministry of Agriculture, declaring *Araucaria araucana* a natural monument *(Decreto Supremo N· 43, 1990, del Ministerio de Agricultura, que declara monumento natural a la Araucaria Araucana)*

Supreme Decree No. 160, 1982, Ministry of Agriculture, declaring Cinco Hermanas, Contulmo, Dos Lagunas, Laguna de Los Cisnes y Los Pingüinos to be natural monuments *(Decreto Supremo N· 160, 1982, del Ministerio de Agricultura, que declara monumentos naturales Cinco Hermanas, Contulmo, Dos Lagunas, Laguna de Los Cisnes y Los Pingüinos)*

Supreme Decree No. 29, 1983, Ministry of Agriculture, declaring Salar de Surire a natural monument *(Decreto Supremo N· 29, 1983, del Ministerio de Agricultura, que declara monumento natural Salar de Surire)*

Supreme Decree No. 123, 1986, Ministry of Agriculture, declaring Pichasca a natural monument *(Decreto Supremo N· 123, 1986, del Ministerio de Agricultura, que declara monumento natural Pichasca)*

Supreme Decree No. 19, 1987, Ministry of National Property, declaring the coastal larch (*alerce costero*) trees to be natural monuments *(Decreto Supremo N· 19, 1987, del Ministerio de Bienes Nacionales, que declara monumento natural Alerce Costero)*

Supreme Decree No. 617, 1988, Ministry of National Property, declaring Cerro Ñielol a natural monument ***(Decreto Supremo N· 617, 1988, del Ministerio de Bienes Nacionales, que declara monumento natural Cerro Ñielol)***

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Supreme Decree No. 51, 1990, Ministry of Agriculture, declaring La Portada a natural monument ***(Decreto Supremo N· 51, 1990, del Ministerio de Agricultura, que declara monumento natural La Portada)***

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Supreme Decree No. 937, 1973, Ministry of Education, creating the Fundo Yerba Loca Nature Sanctuary ***(Decreto Supremo N· 937, 1973, del Ministerio de Educación, que crea Santuario de la Naturaleza Fundo Yerba Loca)***

Supreme Decree No. 631, 1975, Ministry of Education, creating the Laguna El Peral Nature Sanctuary ***(Decreto Supremo N· 631, 1975, del Ministerio de Educación, que crea Santuario de la Naturaleza Laguna El Peral)***

Supreme Decree No. 680, 1975, Ministry of Education, creating the Laguna de Torca Nature Sanctuary ***(Decreto Supremo N· 680, 1975, del Ministerio de Educación, que crea Santuario de la Naturaleza Laguna de Torca)***

Supreme Decree No. 835, 1976, Ministry of Education, creating the Alerzales de Potrero Anay, Castro, Nature Sanctuary ***(Decreto Supremo N· 835, 1976, del Ministerio de Educación, que crea Santuario de la Naturaleza Alerzales de Potrero Anay, de Castro)***

Supreme Decree No. 556, 1976, Ministry of Education, creating a nature sanctuary for Sala y Gómez Island and the islets adjacent to Easter Island, Quinta Normal Park and Hualpén Peninsula ***(Decreto Supremo N· 556, 1976, del Ministerio de Educación, que crea Santuario de la Naturaleza Isla de Sala y Gómez e Islotes adyacentes a Isla de Pascua, Parque Quinta Normal y Península de Hualpén)***

Supreme Decree No. 48, 1978, Ministry of Education, creating Punta Peyuco Nature Sanctuary ***(Decreto Supremo N· 48, 1978, del Ministerio de Educación, que crea Santuario de la Naturaleza Punta Peyuco)***

Supreme Decree No. 622, 1978, Ministry of Education, creating Pájaros Niños (penguins) Islet Nature Sanctuary ***(Decreto Supremo N· 622, 1978, del Ministerio de Educación, que crea Santuario de la Naturaleza Islote Pájaros Niños)***

Supreme Decree No. 2, 1979, Ministry of Education, creating Cachagua Island Nature Sanctuary ***(Decreto Supremo N· 2, 1979, del Ministerio de Educación, que crea Santuario de la Naturaleza Isla de Cachagua)***

Supreme Decree No. 77, 1981, Ministry of Education, creating a nature sanctuary for the spherical granite rock outcroppings in the Rodillo area of Caldera ***(Decreto Supremo N· 77, 1981, del Ministerio de Educación, que crea Santuario de la Naturaleza Afloraciones de rocas de Granito Orbicular en el sector Rodillo, de Caldera)***

Supreme Decree No. 2734, 1981, Ministry of Education, creating the wetlands nature sanctuary around Valdivia ***(Decreto Supremo N· 2.734, 1981, del Ministerio de Educación, que crea Santuario de la Naturaleza Zonas Húmedas***

cercanas a Valdivia)

Supreme Decree No. 772, 1982, Ministry of Education, creating the Peña Blanca Island and Peña Blanca Point Nature Sanctuary *(Decreto Supremo N· 772, 1982, del Ministerio de Educación, que crea Santuario de la Naturaleza Islote Peña Blanca y Punta Peña Blanca)*

Supreme Decree No. 37, 1982, Ministry of Education, creating the Valle de la Luna Nature Sanctuary *(Decreto Supremo N· 37, 1982, del Ministerio de Educación, que crea Santuario de la Naturaleza Valle de la Luna)*

Supreme Decree No. 481, 1990, Ministry of Education, creating the Roca Oceánica (Ocean Rock) Nature Sanctuary *(Decreto Supremo N· 481, 1990, del Ministerio de Educación, que crea Santuario de la Naturaleza Roca Oceánica)*

Supreme Decree No. 480, 1995, Ministry of Education, creating the Animas Falls Nature Sanctuary *(Decreto Supremo N· 480, 1995, del Ministerio de Educación, que crea Santuario de la Naturaleza La Cascada de las Animas)*

Decree Law No. 701, 1974, establishing the legal regime for woodlands or land preferably to be used for forests *(Decreto Ley N· 701, 1974, que establece el régimen legal de los terrenos forestales o preferentemente aptos para la forestación)*

Establishes criteria for logging activity on land suitable for forests, establishing competent authorities, procedures for management plans, rights and obligations, prohibitions and incentives.

Supreme Decree No. 259, 1980, Ministry of Agriculture, approving the Regulations pursuant to Decree Law No. 701, 1974, on forest development *(Decreto Supremo N· 259, 1980, del Ministerio de Agricultura, que aprueba el Reglamento del Decreto Ley N· 701, de 1974, sobre Fomento Forestal)*

Regulates logging activity, including the application of forest management plans and requirements pertaining to forest harvesting methods.

Convention on Wetlands of International Importance, especially as Waterfowl Habitat, signed in Ramsar, Iran, 1971, enacted by Supreme Decree No. 771, 1981, Ministry of External Relations *(Convención relativa a las Zonas Húmedas de Importancia Internacional especialmente como Hábitat de las Aves Acuáticas, suscrita en Ramsar, Irán, 1971, promulgada por Decreto Supremo N· 771, 1981, del Ministerio de Relaciones Exteriores)*

Convention for the Protection of the Flora, Fauna and Natural Scenic Beauty of the Western Hemisphere, signed in Washington, 1940, enacted by Supreme Decree No. 531, 1967, Ministry of External Relations *(Convención para la Protección de la Flora, Fauna y las Bellezas Escénicas Naturales de América, firmada en Washington, 1940, promulgada por Decreto Supremo N· 531, 1967, del Ministerio de Relaciones Exteriores)*

Convention on the Conservation of Migratory Species of Wild Animals, signed in 1979 in the Federal Republic of Germany, enacted by Supreme Decree No. 868, 1981, Ministry of External Relations *(Convención sobre la conservación de las especies migratorias de la fauna salvaje, suscrita en 1979, en la República Federal Alemana, promulgada por Decreto Supremo N· 868, 1981, del Ministerio de Relaciones Exteriores)*

Convention on the Conservation of Antarctic Marine Living Resources, signed in Canberra, 1980, enacted by Supreme Decree No. 662, 1981, Ministry of External Relations *(Convención sobre la Conservación de los Recursos Vivos Marinos Antárticos, suscrita en Canberra, 1980, promulgada por Decreto Supremo N· 662, 1981, del Ministerio de Relaciones Exteriores)*

Biodiversity Convention, signed in Rio de Janeiro, 1992, enacted by Supreme Decree No. 1963, 1994, Ministry of External Relations *(Convenio sobre Diversidad Biológica, suscrito en Rio de Janeiro, 1992, promulgado por Decreto Supremo N· 1.963, 1994, del Ministerio de Relaciones Exteriores)*

Convention on the Conservation of Antarctic Seals, enacted by Supreme Decree No. 191, 1980, Ministry of External Relations *(Convención sobre la Conservación de Focas Antárticas, promulgada por Decreto Supremo N· 191, 1980, del Ministerio de Relaciones Exteriores)*

Law No. 18,892, General Fisheries and Aquiculture *(Ley N· 18.892, General de Pesca y Acuicultura)*

Establishes, where applicable, fisheries administration measures to protect hydrobiological species. Establishes rights, obligations and responsibilities of bearers of aquiculture concessions or permits for sections of water or seabed, to maintain cleanliness and ecological equilibrium which could be altered by aquicultural activity. Monitors the preservation of hydrobiological resources and all fishing activity involving extraction, aquiculture and research, as well as sports fishing, carried out in inland waters and other bodies of water under national jurisdiction. (See also water.)

Decree Law No. 1557, 1976, on preserving or restoring natural resources *(Decreto Ley N· 1.557, 1976, respecto de preservar o reponer recursos naturales)*

A general statement concerning the need for the preservation and restoration of natural resources.

Decree Law No. 1939, 1977, on the acquisition, administration and disposal of government property, as regards the authority of the Ministry of National Property to establish national parks for the preservation of flora and fauna and the environment and to defend the ecological balance *(Decreto Ley N· 1.939, 1977, sobre Adquisición, Administración y Disposición de bienes del Estado, en cuanto a la facultad del Ministerio de Bienes Nacionales, para declarar parques nacionales, con fines de preservación de flora y fauna, del medio ambiente y la defensa del equilibrio ecológico)*

Enables the Ministry of Public Lands to establish national parks for the preservation of flora and fauna and the environment and to defend the ecological balance.

Law No. 18,362, 1984, creating a national system of government-protected wildlife reserves *(Ley N· 18.362, 1984, que crea un sistema nacional de areas silvestres protegidas del Estado)*

Law No. 18,348, 1984, creating the National Forests and Renewable Natural Resources Protection Corporation *(Ley N· 18.348, 1984, que crea la Corporación Nacional Forestal y de Protección de Recursos Naturales Renovables)*

Creates CONAF, the National Forestry Commission, responsible for management of forests, including the preservation of forest resources.

MISCELLANEOUS

Law No. 18,302, Nuclear Safety Act *(Ley N· 18.302, Ley de Seguridad Nuclear)*

Regulates activities related to the peaceful use of nuclear energy and nuclear facilities and the substances used in them for the purposes of protecting the health, safety and security of people, goods and the environment.

Nuclear Test Ban Convention to Prevent Radioactive Pollution, enacted by

Supreme Decree No. 555, 1965, Ministry of External Relations *(Convenio de Proscripción de Pruebas Nucleares para Evitar la Contaminación Radioactiva, promulgado por Decreto Supremo N· 555, 1965, del Ministerio de Relaciones Exteriores)*

Sanitary Code (Article 86), on prior authorization to operate radioactive facilities *(Código Sanitaro (artículo 86), sobre autorización previa para funcionamiento de instalaciones radioactivas)*

Supreme Decree No. 133, 1984, Ministry of Health, approving the regulations on licensing radioactive facilities or equipment generating ionizing radiation *(Decreto Supremo N· 133, 1984, del Ministerio de Salud, que aprueba el Reglamento sobre autorizaciones para instalaciones radioactivas o equipos generadores de radiaciones ionizantes)*

Supreme Decree No. 3, 1985, Ministry of Health, approving the regulations on the radiological protection of radioactive facilities *(Decreto Supremo N· 3, 1985, del Ministerio de Salud, que aprueba el Reglamento de Protección Radiológica de Instalaciones Radioactivas)*

Establishes requirements for radioactive facilities or generating equipment for ionizing radiation, personnel, equipment, and for the import, export, distribution and sale of radioactive substances.

Supreme Decree No. 102, 1985, Ministry of Mines, establishing regulations for the physical protection of nuclear facilities and materials *(Decreto Supremo N· 102, 1985, del Ministerio de Minería, que establece el Reglamento de Protección Física de las Instalaciones y Materiales Nucleares)*

The purpose of this law is to prohibit the unauthorized removal of nuclear materials and to reduce the possibility of an act of sabotage against nuclear facilities that might endanger people, goods, or the environment.

Index

Chilean National Secretariat

Français
Site Map | Home | Contact Us | Search
What's New | Canada-Chile Agreement | Canada-Chile Commission
Cooperative Activities | Canadian Implementation | FAQs | Publications

Green Lane Home | Contact Green Lane | Search the Green Lane | Canada Site

URL of this page
http://www.can-chil.gc.ca/English/Resource/Reports/ChileEM/ChileEM_Appendix.cfm

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What's New
Canada-Chile Agreement
Canada-Chile Commission
Cooperative Activities
Canadian Implementation
FAQs
Publications
Citizen Submissions

Table of Content

ENVIRONMENTAL MANAGEMENT IN CHILE - REPORT
November 1996

BIBLIOGRAPHY

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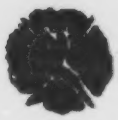
Index

Chilean National Secretariat

Français
Site Map | Home | Contact Us | Search
What's New | Canada-Chile Agreement | Canada-Chile Commission
Cooperative Activities | Canadian Implementation | FAQs | Publications



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Opportunities in Chile

Environmental Equipment and Services

Team Canada · Équipe Canada

Canada

Opportunities in Chile: Environmental Equipment and Services was developed jointly by the Department of Foreign Affairs and International Trade (DFAIT) and Prospectus Inc. It was researched with collaboration from CHIP, Santiago, Chile. This market profile was made possible through the support of Environment Canada and Industry Canada.

This market profile is designed to provide an overview of the market for **environmental equipment and services in Chile**. Although efforts have been made to avoid errors and inaccuracies in this document, it is not intended to be used as the only source of market information on this sector. We encourage the reader to use this publication as one of several resources for commercial dealings with Chile.

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© Minister of Supply and Services, December 1996

Catalogue No. E73-15/12-1996E
ISBN 0-662-24975-5

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Published by Prospectus Inc.
Printed in Canada.

Disponible en français.

Opportunities in Chile:

Environmental Equipment and Services

Chile

CHILE
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BOLIVIA
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Iquique
Antofagasta
Chañaral
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Valparaiso
SANTIAGO
San Antonio
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Table of Contents

A New Focus on Sustainable Development 5

The Environmental Sector in Chile 6

Chile's Environmental Challenge 8

- Urban Environmental Issues 9
  - Air Pollution 10
  - Water Pollution 12
  - Solid Waste Disposal 13
- Mining and Smelting 14
- Forest Products 16
- Fisheries 17
- Energy 18
- Water Supply 18

Customers 19

- Mining and Smelting Companies 20
  - *Corporación del Cobre de Chile (CODELCO)* 21
  - *Empresa Nacional de Minería (ENAMI)* 22
- Energy Sector 23
  - *Empresa Nacional del Petróleo (ENAP)* 23
  - Electricity Producers 23
- Manufacturing Companies 24
- Forest Products Companies 24
- Regulatory Bodies 25
- Public Works Authorities 26
  - *Empresa Metropolitana de Obras Sanitarias (EMOS)* 26
  - *Empresa Metropolitana de Residuos (EMERES)* 26

Competitors 27

Trends and Opportunities 28

- Mining 29
- Forestry 29
- Manufacturing 30
- Urban Pollution 30
  - Sewage 30
  - Air Pollution Control 31
  - Solid Waste Control 32
- Environmental Impact Assessments 32
- Urban and Regional Planning 32

The Regulatory Environment 33

Market Entry Strategies 35

- Technical Seminars 35

WHERE TO GO FOR ADDITIONAL ASSISTANCE 37
Canadian Government Departments and Services in Canada 37
Department of Foreign Affairs and International Trade (DFAIT) 37
Environment Canada 39
Industry Canada (IC) 39
Revenue Canada 41
Canadian International Development Agency (CIDA) 41
Atlantic Canada Opportunities Agency (ACOA) 41
The Federal Office of Regional Development (Quebec), (FORD Q) 42
Western Economic Diversification Canada (WD) 43
Export Development Corporation (EDC) 43
National Research Council (NRC) 44
Canadian Commercial Corporation (CCC) 45
Key Contacts in Canada 45
Business and Professional Associations 45
Chilean Government Offices in Canada 47
Canadian Government Departments and Services in Chile 47
Key Contacts in Chile 47
Chilean Government Departments and Agencies 47
Universities and Research Institutes 50
Major Chilean Business and Professional Organizations 50
Major Chilean Environmental Companies 50
Trade Publications 51

A New Focus on Sustainable Development

Chilean public policy is gradually changing focus from maximizing economic growth to diversifying the economy and fostering a pattern of sustainable development.

Chile's record of strong economic growth makes it the envy of its neighbours. Real gross domestic product (GDP) growth averaged 7 percent in the 10 years ending in 1995. This rapid development has succeeded in improving the welfare of the average Chilean, notwithstanding the very large income disparities that still exist. According to the 1996 United Nations report on human development, Chile ranks 33rd in human development among 174 countries. According to the UN, on a purchasing-power equivalency basis, Chile's 1993 per capita GDP reached US $8,900, the highest in Latin America.

This expansion initially came about through aggressive exploitation of the nation's natural resource base. More recently, public policy has also stressed diversification of the industrial structure. By the late 1980s, the environmental damage resulting from uncontrolled growth had become apparent. Growing public concern about the environment led to a broader understanding of the concept of sustainable development. The Government of Chile responded by establishing the nation's first central environmental authority, in June 1990.

The new *Comisión Nacional del Medio Ambiente (CONAMA)*, National Commission for the Environment, was given a mandate to coordinate the determination of environmental standards, regulations and programs, ensuring compliance with the new environmental law. Previously, environmental policies had been handled independently by each ministry. After three years of work, *CONAMA* drafted the *Ley de Bases del Medio Ambiente*, Basic Law on the Environment, which was enacted in March 1994. Several other laws regulate environmental aspects, public health, mining, agriculture and continental waters.

Chile has the advantage that much of its industrial capacity is fairly new and already meets modern environmental standards. Foreign investment flowed into the country following the restoration of democracy in 1990. Total materialized direct investment between 1990 and 1995 exceeded US $10 billion and authorized investment was almost US $22 billion, as expressed in current US dollars. This inflow compares with a total 1990 GDP of less than US $35 billion.

Direct foreign investors tend to follow either the standards of their home countries or those of international lending institutions. Nonetheless, Chile has a long way to go to bring its older natural resource developments and industrial plants up to modern standards. There is also a serious problem with vehicular air pollution, especially in Santiago, and environmental damage from residential sewage throughout the country.

Higher standards and improved enforcement in all of these areas are expected to put considerable strain on the domestic environmental industry. There is virtually no domestic production of pollution control equipment. Local engineering firms claim half the consulting market, typically in association with foreign environmental specialists.

Industry observers are predicting a period of rapid market growth as the new standards are implemented and producers scramble to comply. This creates excellent opportunities for Canadian companies with environmental products or expertise.

Chile is moving more quickly than other Latin American countries in addressing environmental issues. Companies that establish themselves there will have ready access to other markets in the region as they begin to emerge. Joint ventures with Chilean firms are usually the most effective way of entering the market.

The Environmental Sector in Chile

Chile's environmental sector is smaller than Canada's but it is growing much more rapidly and it has specific needs for many of Canada's niche technologies.

The growing recognition of Chile's environmental problems has stimulated the emergence of a specialized environmental consulting industry. Traditionally, environmental issues were dealt with as part of the overall engineering function. Now the larger engineering firms are creating specialist divisions and small, specialized companies are entering the market. A number of large foreign consulting and engineering firms have opened their own offices in Chile.

There are no major manufacturers of specialized pollution control equipment in Chile. Domestic construction and engineering firms are competitive for the low-technology components of environment projects. But they usually rely on foreign suppliers for specialized technologies. In many cases, suppliers of environmental technologies in Canada have been invited to bid on projects by Canadian investors or general engineering contractors who were familiar with their capabilities.

Government environmental projects generally involve public tenders. The winning bidders are typically consortia of Chilean and foreign firms. Some of these joint ventures have moved on to other Latin American markets once a track record was established in Chile.

Learning from Experience

Beak Consultants Limited (BCL)

Beak Consultants Limited (BCL) is part of the Beak Group, an employee-owned consortium made up of about 300 employees, with offices in Canada, the United States and Germany, as well as affiliates in a number of other counties.

Beak's reputation was founded on its strength in aquatic sciences. But its services have grown to cover the entire range of disciplines necessary to provide fully-integrated environmental solutions.

Beak participates in toxicology workshops around the world. Contacts established at these events have often led to export opportunities. The company's original entry into Chile was through participation in a series of World Bank seminars in that country, starting in the early 1990s. Initial experience was mixed: some contacts led to sales but others did not.

An important lesson learned from this experience was that even if there is no real Chilean competition for a particular technology, it takes time to sell new and unfamiliar approaches. This can be difficult at a distance. As Don Lush, technical manager at BCL puts it, "If we had put someone down there it would have been faster."

Mr. Lush points out that if a company cannot afford a local office, the next-best alternative is an alliance with a company that has one. This does not necessarily have to be a Chilean company. For instance, Beak has a joint venture with H. A. Simons of Vancouver. Simons does construction work for mining companies and BCL does the environmental audits. Through such alliances, Beak is able to take advantage of the local presence of other Canadian companies to raise its own profile.

Mr. Lush suggests that companies planning to enter the Chilean market should not expect to make significant sales in the first year or two. They also need to be prepared. As Lush notes, "There is no substitute to being on the ground in the market you are interested in; use Canadian trade officials to help you do your homework, and feel out the market before you plunge in." He also points to the importance of checking local sources and contacts in Canada in related fields. A lot of Canadian companies are already in the Chilean market: their experience and business contacts can be invaluable to someone just entering the market.

Environmental Equipment and Services Market, 1996

US $ millions

Air pollution control	125
Wastewater treatment	82
Environmental consulting	30
Industrial and hazardous solid waste control	30
Municipal solid waste	20
Total	**287**

Source: Estimates by the United States Department of Commerce, from various publications

Estimates of the size of Chile's environmental market vary from 1 to 2 percent of gross domestic product (GDP), with an average of about 1.5 percent. This implies a 1996 market of around US $750 million. According to estimates by the United States Department of Commerce, roughly one-third of this spending is for environmental equipment and another US $30 million is for consulting services. A large proportion of this market segment is imported. The balance of about US $470 million comprises the infrastructure components of environmental projects. This segment is dominated by Chilean engineering firms. Growth rates are currently very high since major expenditures are needed to comply with new and anticipated environmental standards and regulations.

The *Sociedad de Fomento Fabril (SOFOFA)*, Chile's major industry association, represents companies accounting for 85 percent of the nation's industrial output. *SOFOFA* has prepared a compendium of all proposed major industrial investment projects between 1996 and 2004. These projects total about US $20 billion. Association officials estimate that roughly 10 percent, or US $2 billion, will be spent on environmental control equipment and services. In addition, there are major needs for public infrastructure projects and retro-fitted solutions for older operations.

Chile is a good market for environmental equipment and services. Even though its economy is smaller than many others in Latin America, both the public and private sectors in Chile are more advanced in addressing environmental problems. Canadian environmental businesses that gain experience in Chile are likely to find themselves at an advantage as the market for environmental equipment and services grows in other Latin American countries.

Canadian businesses may have an advantage in the Chilean market for two reasons. First, because of the similarity in the structure of the Canadian and Chilean economies. Canadian environmental firms have developed core competencies in the areas which are most heavily demanded in Chile. Second, negotiations have been concluded on a bilateral free trade agreement between Canada and Chile, including side agreements on labour and the environment. This is expected to give Canadian firms a head start on foreign competitors. Indeed, the negotiations themselves have already raised Canada's profile in Chile.

Chile's Environmental Challenge

Chile faces serious challenges in virtually every aspect of the environment, including air and water pollution, as well as solid waste disposal.

Decades of environmental neglect have left Chile with a myriad of serious problems. Urban smog, spoiled beaches, malodorous emissions from fish plants, and depleted natural forests are only the most visible examples. In 1991, the *Comisión Nacional del Medio Ambiente (CONAMA)*, National Commission for the Environment, identified Chile's 10 most egregious environmental problems. In recent interviews, *CONAMA* officials confirmed that this list remains valid today.

The severity of these problems varies greatly by region. The Santiago Metropolitan Region is faced with severe air and water pollution. Most of the air contamination comes from vehicular and domestic sources. Industrial wastes are comparatively low in volume, but untreated toxic substances are routinely dumped into the sewers. In the north, mines and fish plants are the source of water and air pollution. In the south, the main threats are oil spills from offshore drilling, as well as degradation from coal mining, tree farming and ammonia-urea production.

Chile's 10 Most Egregious Environmental Problems

- Solid waste management and disposal
- Water pollution from human sources (particularly in Santiago, Concepción, Valparaíso, and Puerto Montt)
- Water pollution from industrial sources
- Air pollution from fixed and moving sources
- Destruction of flora and fauna and/or habitat destruction
- Over-exploitation of forest and fisheries resources
- Other urban environmental problems stemming from expansion
- Faulty transportation infrastructure
- Lack of recreational areas and parks
- Deteriorating soil quality

Source: *Comisión Nacional del Medio Ambiente (CONAMA)*, National Commission for the Environment

Principal Urban Environmental Problems

I malodorous gasses and particles from fishmeal industries, industrial waste and untreated sewage, sulphuric acid emissions

II water pollution from the fishmeal industry, untreated sewage, sulphuric acid emissions

III atmospheric and water pollution from fishmeal industry, untreated sewage, contamination from dams that stabilize mine tailings and sewage

IV water contamination from sewage disposal, odour contamination from fishmeal industry

V air pollution from oil refinery, cement and smelting industries; nearby forest fires; exhaust fumes; and water pollution from industry and sewage

VI water pollution from sewage disposal

VII rivers contaminated with sewage, air and water pollution from paper mills

VIII water pollution from industrial wastes, odour contamination from fish mills

IX water pollution from sewage disposal, air pollution from wood heating systems and vehicle emissions

X problems resulting from sewage and garbage disposal, forestry exploitation

XI contamination from sewage and garbage disposal

XII water and odour contamination from sewage and garbage disposal, residues from the ammonium-urea industry

Source: R.G. Trucco, "Environmental Issues in Chile", Canadian Embassy, Santiago, March 1995

Urban Environmental Issues

Santiago is considered the third most polluted city in Latin America, after Mexico City and Sao Paulo. Other cities with serious pollution include Concepción, Valparaíso, and Puerto Montt. Air pollution is the most visible problem, but untreated sewage is also a very serious issue. Solid waste disposal has not yet received the same degree of attention, but some of Santiago's landfills have been closed and this is a growing concern.

The environmental problems of the Santiago Municipal Region are dealt with by the *Comisión Especial de Descontaminación de la Región Metropolitan (CEDRM)*, Special Commission for Decontamination of the Metropolitan Region, which was formed in 1990, to coordinate the efforts of various government departments in the region. It is overseen by a committee of 13 federal Ministers and it has close links with *Comisión Nacional del Medio Ambiente (CONAMA)*, National Commission for the Environment.

Sources of Emissions and Atmospheric Contaminants in Santiago, 1987

METRIC TONNES PER YEAR

Sources/Contaminants	PTS	Sox	Nox	COV	CO
Industrial boilers and ovens	3,444	4,440	740	472	19,651
Industrial motors	1	1	20	9	216
Industrial processes	4,504	13,878	63	7,891	1,645
Boilers in buildings	209	702	70	5	95
Residential combustion	1,661	379	237	419	20,114
Open-top burners	438	26	161	847	2,377
Non-industrial COV evaporation	na	na	na	5,348	na
Stray dusts not from chimneys	33,910	na	na	na	na
Combustion from mobile sources	2,661	3,008	11,530	14,011	183,057
Total	**46,828**	**22,434**	12,821	29,002	227,155

Source: *Intendencia Region Metropolitana, Santiago, 1987*

Air Pollution

Exhaust and dust from automobiles, trucks and about 10,000 diesel buses are the most important sources of urban air pollution. Industrial emissions and residues from wood heating also contribute to this problem.

The most pressing issue for municipal authorities is how to control breathable, suspended particles less than 10 microns in diameter, known as PM10 components. According to *CONAMA*, 72 percent of these come from street dust, mostly caused by vehicle traffic on Santiago's many unpaved roads. Before the issue of new regulations in 1990, mobile combustion sources contributed 90 percent of emissions of the nitrous oxides and 80 percent of the carbon monoxide in the city's air.

The *Ministerio de Transportes y Telecomunicaciones (MITT)*, Ministry of Transportation and Telecommunications, is responsible for establishing norms for vehicular pollution, based on priorities defined by *CONAMA* and the *Ministerio de Salud (MINSAL)*, Ministry of Health. It is also responsible for vehicle inspections and traffic-reduction programs.

In October 1992, catalytic converters and electronic fuel injection became mandatory for all newly-imported vehicles. Beginning in September 1996, the government implemented a new restriction called *EPANO 24*, which requires the use of specially designed diesel motors in buses and trucks.

CONAMA has established standards for particulate emissions of urban-based industries. The "particulate matter standard" in Santiago in May 1995 was 112 micrograms per cubic metre. The limit will be reduced to 56 micrograms per cubic metre in 1997. Standards will also be issued for other types of emissions, including carbon monoxide, ozone, and nitrogen dioxide.

Air quality in Santiago is continuously monitored by *CONAMA* using a computerized system known as *Sistema de Información para el Control de la Contaminación Atmosférica de Santiago*, an atmospheric contamination control system for Santiago. This system, which was developed with Swedish government assistance, reports a continuous index of air contamination. When the official index of several different pollutants reaches 300, a "pre-emergency" condition is declared, and an emergency condition exists when it hits 500. These events trigger mandatory shut-downs of high-pollution industrial operations and restrictions on motor vehicle use. The latter are based on the last digit of the vehicle's licence plate number.

As a result of these regulations, air contamination has decreased gradually over the past five years. In the winter months of 1990 (May to August), pre-emergency conditions occurred on 35 days, while atmospheric emergencies were declared on 12 days. In 1995, there were only 8 pre-emergency days and no emergencies were declared.

New regulations that went into effect in early July 1996 increased the disruptions caused by air pollution. The new law established a "state of alert" when the index reaches 200. In this case, cars with plate numbers ending in three digits (30 percent of the fleet) are prohibited from daytime operation. Fixed air pollution sources responsible for 10 percent of particulate emissions are shut down for 24 hours, and physical education classes in the schools are suspended. An index of 300 now triggers a 50 percent traffic restriction, which shifts to 80 percent at the 500 level. Operations of polluting industries are restricted proportionately.

These changes have caused considerable controversy, including the resignation of two prominent doctors from the *Colegio Médico*, Medical College, who believed they were not strong enough. Three days after the new regulations went into effect, the *Parque O'Higgins* contamination monitoring station registered a level of 400. Even though a pre-emergency condition does not technically exist without a 300 level at a second station, the government banned daytime use of vehicles with plate numbers ending in four digits. It also closed 169 industrial plants and impounded 130 buses for violating the regulations. This provoked a strike threat by the bus drivers' union.

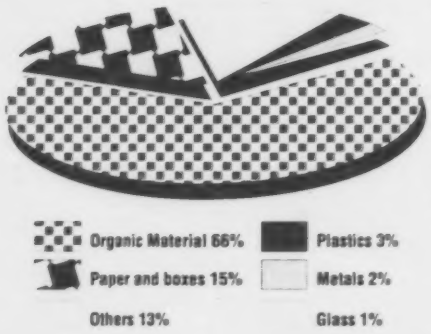
Air pollution will be further reduced by the planned conversion of Santiago's industrial plants to natural gas. The gas will be transported from Argentina via pipeline. The government has targetted the 120 largest industries for conversion in 1997. As of June 1996, half of these had signed contracts with *Metrogas* and almost three-quarters could be ready to convert by 1 May 1997.

Water Pollution

Sewage treatment in Santiago is the responsibility of the *Empresa Metropolitana de Obras Sanitarias (EMOS)*, Metropolitan Regional Sanitary Works Company. *EMOS* is a branch of *Corporación de Fomento de la Producción (CORFO)*, the National Development Agency, which is responsible for sewage treatment throughout the country. Although the law requires that all sewage be treated, only about 2 percent of Santiago's Metropolitan Region's discharges are presently in compliance. About 15,000 litres per second of raw sewage are dumped into the Mapocho and Maipo rivers and the Zanjón de la Aguada Canal.

In 1993, *EMOS* completed construction of Santiago's first waste treatment plant. This small plant is considered experimental and treats 200 litres per second of the sewage produced by some 100,000 inhabitants. It is fully operational and is assisting in the design of three giant plants *EMOS* plans to build by 2009. New regulations requiring the treatment of industrial wastes that are discharged into the sewer system are anticipated over the next few years.

Solid Waste Composition in Santiago



Source: *Intendencia Región Metropolitana*, Santiago, 1986

Sewage and Solid Waste Treatment by Region

	Sewage (1992) thousands of cubic metres		Solid Waste (1990) tonnes/month	
Region	Total Discharge	% Treated	Total Waste	% Controlled
I	n/a	n/a	n/a	n/a
II	4,935	0	3,738	0
III	9,621	69	4,609	91
IV	6,156	38	2,162	0
V	29,184	10	3,690	0
Metropolitan Region	345,587	1	21,238	86
VI	23,139	7	6,588	74
VII	29,195	11	6,516	81
VIII	44,919	1	14,816	63
IX	19,695	5	5,072	14
X	14,710	2	7,658	27
XI	2,565	0	600	71
XII	n/a	n/a	2,953	0

n/a signifies that figures are not available
Source: Based on data from the *Comisión Nacional del Medio Ambiente (CONAMA)*, National Commission for the Environment

Solid Waste Disposal

Municipalities are responsible for solid waste disposal in Chile. Solid waste disposal has not received the same attention from regulators as air and water pollution. The regulatory authorities have tended to work cooperatively with the municipalities rather than impose rigid requirements. The new laws have had their main effect in the area of hazardous waste separation, recycling and treatment.

The solid waste problem has grown increasingly difficult as urban landfills have become overloaded and subsequently shut down. Residents oppose the development of new sites in urban areas, and only one new site has been approved in Santiago in recent years.

According to estimates by the United States Department of Commerce, the municipalities of the Santiago Metropolitan Region spend more than US $25 million annually to dispose of some 3,000 tonnes of solid waste per day. These municipalities are home to more than one-third of Chile's population.

The Value of Preparation

The ADI Group

The ADI Group consists of five separate companies which deliver environmental systems and services to a wide variety of clients in 22 countries. The company was founded in 1945 in Fredericton, New Brunswick, and it now has branch offices across Canada and in the United States. A staff of over 230 professionals provide engineering, consulting, design-build and project management services. The ADI Group moved into Chile two years ago through its international arm, ADI International Inc.

ADI was attracted to Chile because of its growing economy, political stability and strategic location. Chile's strong mining sector made it a natural market for ADI expertise and an ideal base for operations elsewhere in Latin America.

ADI's move into the Chilean market was thoroughly planned. They had the advantage of senior staff who had grown up in South America, and they launched a five-year plan to train their senior people in the language and culture. As the senior consultant and vice president, Latin America and Caribbean at ADI International, Frank Scheme says, "people want to know who you are, your family's background and your company's philosophy; personal contact is very, very important."

Partnering was another key element of ADI's market entry plan. The company evaluated 7 companies before they chose *CICA Ingeniería* as a joint venture partner. It took 10 months to get to the short-list stage and another 4 months to conclude an agreement. In the end, Scheme says, the companies chose each other based largely on "chemistry" and the will to succeed together. Since then, they have also signed a cooperative agreement with *OMSA*, a large Chilean construction company, and have just completed the first phase of an agreement with *Comisión Nacional del Medio Ambiente (CONAMA)*, National Commission for the Environment, to train mine supervisors.

Mr. Scheme underlines the importance of preparing carefully before setting off. As he puts it: "Often people think that sending a fax saying that they are coming is all they need and that the [Canadian Embassy] will do the research; but that's a mistake; you need to do your own homework."

Mining and Smelting

Mining is the most important sector of the Chilean economy, accounting for almost 9 percent of gross domestic product (GDP) and about half of total exports. The bulk of these exports consists of copper concentrates and cathodes produced by local smelters. Chile is also an important exporter of molybdenum, gold, silver and iron ore, as well as non-metallic minerals such as lithium, iodine, nitrates and sodium sulphate.

According to *Comisión Nacional del Medio Ambiente (CONAMA)*, National Commission for the Environment, mining and smelting is responsible for 92 percent of sulphur dioxide emissions. The industry also discharges copper tailings, iron salts, antimony, arsenic and heavy metals into the water system.

Newly constructed private mines include state-of-the-art pollution prevention measures in their original designs. Older mines are more likely to require "end-of-pipe" solutions. The *Sociedad Nacional de Minería (SONAMI)*, Chile's private mining industry association, has committed itself to promote environmental improvements through a written set of environmental objectives backed up by a training program.

For the past several years, the Chilean government has pursued a policy of encouraging private development of new mines, while retaining its existing mining holdings as a source of public revenue. The foreign investors who have developed the more recent mining projects have generally applied the standards of their home countries. For the most part, therefore, environmental problems in the mining industry are associated with older operations, the largest of which are government-owned. This includes those run by *Corporación del Cobre de Chile (CODELCO)*, the state-owned copper mining company and *Empresa Nacional de Minería (ENAMI)*, Chile's state-owned mining and smelting.

A series of decrees beginning in 1992 established emission limits for the major state-owned mining and smelting operations. Although the decrees gave them the rest of the century to comply, the larger operations took prompt action. For example, for some 60 years *CODELCO* dumped the mine tailings from its *El Salvador* mine directly into the Salado River, which empties into Chañaral Bay about 100 kilometres to the west. The problem was brought under control by damming and settling the tailings in the desert near the operation. And the Canadian firm, Bravo Golden Mining, recently announced a pilot project to clean up the accumulated contamination on Chañaral Beach. The pilot plant will process 5.5 tonnes of sand per hour and will recover copper sulfate before returning clean sand to the beach. If the tests are successful, a US $30 million plant will be built to process up to 1,500 tonnes per hour.

The sulphur dioxide problem has also been addressed, mainly using liquid sulphuric acid plants. According to *CONAMA*, new flash furnace technologies that create concentrated sulphur are likely to be used more extensively in the future. Experimental furnaces using Finnish flash technology have been installed at several *CODELCO* smelters.

Small- and medium-sized mining operations are now attracting increased attention from the regulatory authorities. *CONAMA* has been working with representatives of mining companies through a group known as the Ad hoc Committee on the Environment. Canada is assisting Chile to develop more effective regulatory mechanisms for the mining industry under the terms of a 1995 memorandum of understanding.

Mining Industry Pollution

I 1 antimony, arsenic and heavy metals from silver processing
2 clay and mercury from gold flotation and amalgamation

II 2 arsenic in soil, clay and mercury from gold processing

III 1 atmospheric contamination from smelting industries
2 arsenic, cyanide, carbon disulphides from small copper mining operations

IV 1 manganese laden dust
2 waste from gold, silver and iron mining

V 1 sulphur emissions, arsenic dust, acid rain from mines and smelting plants

2 sulphuric acids, caustic soda, elemental selenium and iron oxide from smelting industry

VII 2 tailings from copper mines

VIII 2 acids, iron salts, coal powder, clays from coal mines

XII 1 coal mining emissions

1 = Atmospheric pollution
2 = Water pollution

Source: R.G. Trucco for, "Environmental Issues in Chile" , Canadian Embassy, Santiago, March 1995.

Forest Products

Chile's large forest products sector is another important source of export earnings, and it has been the source of major environmental concerns. The sawmill industry has only limited problems, associated mainly with the use of sodium pentacholorophenates as fungicides. There are far more serious problems associated with cellulose production and the operation of commercial plantations. Chile's forest product exports have doubled in the last five years, and there is concern that such growth is not sustainable without serious environmental consequences.

Chile's natural forests, which total almost 10 million hectares, have been severely damaged by poor resource management over the last century. An area of almost 20 million hectares was identified as "the erosion area" in 1958. The principal response has been government incentives to restore these areas using non-indigenous species, which grow much more quickly than the native types. Commercial plantations increased from 190,000 hectares in 1970 to about 2 million hectares in 1995. About 85 percent of the farmed area is planted in fast-growing *Pinus Radiata* from California. The rest is mostly *Eucalyptus Globulus* from Australia.

Initially, the recovery of eroded areas was welcomed, but there is now growing concern about the uncontrolled growth of this industry and about the risks of monoculture techniques and the extinction of indigenous species. For example, there has been considerable controversy over the recent approval of the *Río Cóndor* forestry project in the far south. This US $200 million project, which will be undertaken by US-based Trillium Corporation, was approved in April 1996. The project will exploit 100,000 hectares of native *lenga coigue* forest in Tierra del Fuego.

According to industry experts, these are relatively new problems and the damage so far is not serious, provided that they are brought under control soon. Similarly, the pulp and paper industry is fairly young and the problems are mainly associated with emission and effluent controls rather than remediation.

Most of the new plants being built with foreign financing incorporate modern technology. For example, a US $1 billion pulp plant will be constructed in Valdivia by a joint venture involving *Celulosa Arauco y Constitución (CELCO)* and Stora Kopparbergs. The 500 million tonne-per-year plant will be as modern as any comparable international competitor, and will include at least two effluent treatment plants. Another large pulp producer, Royal Dutch Shell's *Forestal Industrial Santa Fe*, has ISO 9000 approval for its pulp and is now working on meeting British silviculture standards.

Chile's Forestry Companies Lag Behind Mining Counterparts

According to one expert, the modern environmental practices of well-financed industry giants are not typical of the forestry industry as a whole.

Alfredo Unda is head of the environmental division of *Instituto Forestal (INFOR)*, Forestry Institute, a government research and technology transfer agency for the forestry sector. He says that the industry began to recognize the need for modern silviculture technology and environmental management only over the last two to three years. Today, the larger forestry companies have environmental units, he notes, but most are still figuring out what they ought to be doing. This contrasts with the rapid progress achieved in the mining sector.

Unda says he observed a good illustration of this at a seminar for the mining and forestry industries held in March 1995. The seminar was arranged by *INFOR*, the Canadian Embassy and the *Sociedad de Fomento Fabril (SOFOFA)*, Chile's major industry association, to promote technology transfers between Canadian and Chilean companies. The meeting room for the mining sector, Unda recalls, was packed with Chilean company representatives engaged in lively debate and asking a lot of questions about the technology being presented. But the forestry industry meeting room was not even half-full, and comments or inquiries from the few executives present were scarce.

The problem, Unda says, was not a lack of interest, but rather that the industry overall is not yet sufficiently aware of the technological posibilities to take advantage of the Canadian capabilities.

FISHERIES

Chile's fishing industry was relatively slow to develop, but commercial fishing now accounts for about 2 percent of the nation's GDP. Total landings of all species in 1994 were almost 8 million tonnes, a 31 percent increase from the previous year. More than 90 percent of the catch consists of pelagic species, including jack mackerel, sardine and anchovy. These are the principal raw material for fishmeal and oil, which accounts for more than 85 percent of natural fisheries production. Chile is the source of one-third of the world's fishmeal supply.

The fishmeal industry is responsible for a considerable amount of pollution. Fishmeal plants are located mostly in the north, mainly around urban areas, where strong odours are a serious nuisance. There are more than 50 plants, around the cities of Arica, Iquique, Tocopilla, Caldera, Coquimbo, Coronel and Talcahuano.

In many cases, effluents from these plants are discharged into the sea with little or no treatment. This includes water used to pump fish from boats and blood and other fluids from fish, as well as deodorizers and other chemicals used in the process. The main contaminants are suspended particulate matter, trimethylamine and sulfhydric acid. New regulations went into effect in 1994, which require fish plants to reduce pollution. Some of them have installed modern solid-recovery systems for wastewater and are filtering their airborne emissions.

Aquaculture has grown substantially since it was introduced about 10 years ago. Fish farming now accounts for about one-quarter of Chile's exports of fish products. In particular, farmed salmon has been a rapidly growing export. Production more than doubled in 1995 to more than 100,000 tonnes. Turbot farming is now being developed and research is being conducted for cultivated abalone, shrimp and algae.

The aquaculture industry is not believed to cause significant contamination of the environment, but it is faced with serious concerns over unknown diseases in salmon. Strict measures are in effect, including import controls on salmon eggs. Other regulations require the physical separation of artificial fish cultures.

Energy

About 30 percent of Chile's oil and gas consumption comes from production by *Empresa Nacional del Petróleo (ENAP)*, the national petroleum company. It operates 23 platforms in the Straight of Magellan, at the nation's southern tip, as well as 37 oil terminals and 3 refineries. There is a significant hazard of oil spills at every point along the production and distribution route.

Conditions in the Straight of Magellan are rough, with tide differences of up to 10 metres and strong winds. The coastline is sandy with many estuaries. There have been several major spills over the past few decades, including one of 52,000 tonnes in 1974.

Spills from *ENAP* facilities add to hydrocarbon pollution from other marine sources, such as discharges from cargo and fishing boats. Hydrocarbon concentrations of up to 66 micrograms per litre have been recorded in sea water in the bay at Valparaíso. Concentration in sand of 230 micrograms per litre were found at Michalla during 1986.

Thermoelectric plants are another important source of air pollution, especially sulphur dioxide emissions. In 1995, there were 74 thermoelectric plants in operation in Chile. Privatization of the electric power sector began in the late 1980s. Separate distribution companies buy power from the generation companies and sell it to the public, subject to government price regulations. The conversion of some plants to natural gas will begin when the new *GasAndes* pipeline from Argentina is complete. While this will reduce overall emissions, it will create new types of pollutants that will have to be dealt with.

Water Supply

Chile's geography makes finding a sustainable fresh-water supply a major issue. Much of the country has an arid climate and does not have ready access to water of adequate quality. Two-thirds of the territory is arid or semi-arid. For the most part, the population is located in parts of the country where water is available; however, mining, agriculture and other water-intensive industries are mainly located in arid regions.

A complex topography exacerbates the problem by making water distribution difficult. For this reason, major efforts are needed to locate, store and distribute water. A rapidly growing population combined with sustained economic growth will double demands for domestic and industrial water over the next 50 years.

The mining industry is a major user of water, consuming an estimated 7 cubic metres per second. Only crude estimates are possible for the industrial sector, which is believed to use close to 20 cubic metres per second. About 2 million hectares of agricultural land are irrigated at least part of the time with a total demand exceeding 600 cubic metres per second for the country as a whole.

Hydroelectric generation presently takes advantage of less than one-fifth of the nation's maximum water flow of 2,500 cubic metres per second. Hydroelectric generation capacity is expected to increase rapidly to exploit this resource.

Measures proposed to cope with Chile's water supply problems include the development of reservoirs, reduced waste and better utilization of water resources, recycling and contamination prevention, and the development of desalinization technologies.

CUSTOMERS

Customers for environmental equipment and services are found throughout the private and public sectors, especially in mining, energy, forestry and in municipal infrastructure.

Customers for environmental assessment, control and remediation technologies are found throughout the public and private sectors. Governments are by far Chile's major polluters. Large private projects were the first to comply with new and anticipated environmental regulations. The large state-owned enterprises in mining, smelting, and energy have only recently begun to develop compliance plans. Enforcement efforts are gradually spreading to medium-sized industrial corporations, which are now a developing market for environmental technologies. For the most part, efforts to bring public works into compliance with new standards have been based on consultation and collaboration rather than strict enforcement. Nonetheless, the trend towards privatization of public infrastructure is gradually applying private sector standards to new projects.

Public sector customers include government agencies charged with regulating environmental issues as well as publicly-owned industrial corporations. In the private sector, the mining industry has dominated the environmental market so far. However, tougher regulations are gradually forcing manufacturing, forestry and fishery industries to adopt modern pollution-control methods.

VOLUNTARY ENVIRONMENTAL IMPACT ASSESSMENTS SUBMITTED TO *CONAMA*, 1990 TO JULY, 1995

ESTIMATED PROJECT INVESTMENT IN US $ MILLIONS

Sector	Assessments	Total Investment	Average Investment
Mining	48	7,161.3	149.2
Energy	29	4,635.6	159.9
Industry	18	2,332.9	129.6
Forestry	4	1,264.0	316.0
Public works	12	38.7	3.2
Ports	2	24.0	12.0
Agriculture	1	12.0	12.0
Total			**135.7**

Source: *Comisión Nacional del Medio Ambiente (CONAMA)*, National Commission for the Environment

MINING AND SMELTING COMPANIES

Corporación del Cobre de Chile (CODELCO), the state-owned copper mining company, dominates the sector with about half of all copper production. Its two major mines, the underground *El Teniente* and the open pit *Chuquicamata*, are considered "mega-sources" of environmental contamination.

Private mining concerns now own more than half of the mining industry's total capacity. The foreign-owned mines tend to be relatively large and they use modern technology. There are 32 Canadian mining companies currently operating in Chile, and several more have Chilean representatives. *CODELCO* has entered into several joint ventures with private companies including Toronto-based Noranda Mining and Exploration Inc. Some Canadian environmental companies have used their connections in the mining industry at home to gain access to the market in Chile.

Small- and Medium-sized Mining Firms Gear Up for Environmental Changes

The mining industry is considered a leader among Chilean industries in environmental responsibility and the use of clean technologies. But according to Guillermo García, president of the *Sociedad Nacional de Minería (SONAMI)*, Chile's private mining industry association, this observation applies mainly to large foreign-owned mines. Small- to medium-sized enterprises (SMEs) have lagged behind their bigger counterparts in adopting environmentally sound practices.

Multinational mining companies such as Broken Hill Properties, Exxon, Placer Dome, Falconbridge and the Anglo-American Corporation have been applying the environmental policies of their parent companies to their Chilean operations since the 1980s.

In the past six years, medium-sized mines, which are responsible for 23 percent of the private sector's mineral output, have begun to incorporate environmental management and technology into their operations. They have also been voluntarily conducting environmental impact studies. They have created specialized management positions for environmental affairs and training, often developing in-house experts or employing professionals from state agencies.

Small-scale mining, on the other hand, still has a long way to go. *SONAMI* sees a lack of financial resources, information and training as the major obstacles. But new legislation will eventually force them to take action. *SONAMI* is concerned that many of these mines may be forced out of business if they are required to conform to new standards too quickly.

Mr. García believes that Chile should not simply try to match the standards of developed nations, but must analyze the risks and cost-effectiveness of each new standard. He says that Chile needs "demanding standards that are internationally acceptable," but at the same time, they must be workable, "because we would not want to end up with an excellent standard that is inapplicable."

Canadian Companies with Major Investments in Chilean Mining

Barrick Gold Corp.	KAP Resources Ltd.
Placer Dome Inc.	International Mahogany Corp.
Cominco Ltd.	International Mahogany Corp. & Conifer Capital Corp.
Cominco Resources International Ltd.	Can Pro Development Ltd.
Teck Corp.	Homestake Canada Ltd.
Bema Gold Corp.	Aurex Resources Corp.
TVX Gold Inc.	Cambior Inc.
BDG Pacific Resources Inc.	Canada Tungsten Inc.
Dayton Mining Corp.	Inco Limited
Northgate Exploration Ltd.	Pegasus Gold Inc.
Rayrock Yellowknife Resources Inc.	Echo Bay Mines Ltd.
Rio Algom Ltd.	Inmet Mining Corp.
Princeton Mining Corp.	Laminco Resources Inc.
Abauco Resources Corp.	Thyssen Mining Construction of Canada Ltd.
Noranda Mining and Exploration Inc.	Gibraltar Mines Ltd.
Falconbridge Ltd.	Cameco Corp.

Source: DFAIT, January 1996

Corporación del Cobre de Chile (CODELCO)

CODELCO is Chile's state-owned copper mining company. It has identified environmental responsibility and management as one of the most important of its seven long-term strategic objectives, second only to the goal of assuring the long-term viability of the business.

The environmental unit at *CODELCO* has announced a six-year investment plan aimed at bringing *CODELCO*'s four copper divisions up to standards set by *Comisión Nacional del Medio Ambiente (CONAMA)*, National Commission for the Environment. It also expects to obtain the environmental certification that will be demanded in the future by international copper markets. Its environmental plan seeks to develop and introduce new technology as well as provide division executives and plant supervisors with skills in environmental management.

The environmental unit is responsible for the general orientation of the corporation's environmental policies and compliance with *CONAMA* and internal standards by the different divisions. The actual execution of environmental plans is the responsibility of each division. The four mining operations are *Chuquicamata*, *Andina*, *El Salvador* and *El Teniente*.

CODELCO Development Plan
US $ millions

	1994	1995	1996	1997	1998	1999	Total
Development projects	261.3	168.8	459.6	613.4	360.9	322.5	**2,186.5**
Decontamination projects	38.8	98.0	142.7	140.7	181.5	75.1	**676.8**
Replacements and infrastructure	42.5	36.2	35.6	40.7	41.2	40.7	**236.9**
Geological exploration	19.3	19.4	15.3	15.3	17.3	17.8	**104.4**
Research and development	26.7	19.6	8.1	15.3	15.3	15.3	**100.3**
Other projects	9.3	7.4	14.9	15.2	15.3	15.3	**77.4**
Total investment	**397.9**	**349.4**	**676.2**	**840.6**	**631.5**	**486.7**	**3,382.3**

Source: *Corporación del Cobre de Chile (CODELCO), Chile's state-owned copper mining company*

Empresa Nacional de Minería (ENAMI)

ENAMI is Chile's other state-owned mining and smelting company. It is responsible for operating smaller mines as well as assisting small- and medium-sized copper producers. *ENAMI* will spend approximately US $150 million on its environmental remediation program between 1995 and 1999.

According to *ENAMI* officials, the most important element of this plan is a sulphuric acid plant, which will be installed during 1996 at a cost of about US $18 million. The project will dismantle an existing plant, located at a mine, and re-assemble it at the *Paipote* foundry. It will have sufficient capacity to treat all of the foundry's emissions.

ENAMI offers significant opportunities, but its spending is limited by the government. For example, when *ENAMI*'s *Las Ventanas* smelter was shut down for exceeding allowable emission limits, it hired a consulting company from the United Kingdom to come up with solutions. An investment of US $115 million would have been needed to recover the majority of the sulphur dioxide. But the *Minsterio de Minería* and the *Ministerio de Hacienda*, ministries of Mines and Finance, would approve only US $38 million for the project, later increased to US $50 million.

Energy Sector

Selecting the Right Partner

Hatfield Consultants Ltd.

Hatfield Consultants Ltd. (HCL) is a 50-person environmental consulting firm in Vancouver, established in 1974. It provides services in the areas of aquaculture, fisheries, wildlife, environmental and socio-economic impact assessment, pollution monitoring, contaminant assessments and spill contingency planning. Since 1980, HCL has established three joint venture operations internationally, one in Chile.

HCL's joint venture in Chile was called *HISA*. It was developed to capitalize on the development of the salmon farming industry in Chile. *HISA* was 75 percent owned by HCL and this joint venture, in turn, took minority equity positions in the slamon farming projects.

HCL decided to get out of the various projects because they perceived that the risks were too great given the increasingly large capital requirements of the projects and their lack of control (25 percent) over the Board of Directors, regarding some of the decisions that were being made. The Chilean joint venture, *HISA*, is currently dormant, although good relations still exist between HCL and their Chilean partners, *Puga Mujica Asociados*.

HCL incorporated this experience into its overall policies for foreign operations. It now tries to maintain a majority position, close to 50 percent equity, wherever possible. To ensure commitment, local participation should be at least 25 percent. HCL also recognizes that regular communications at the staff level is an essential ingredient to an effective partnership. And finally, the company advises that foreign joint ventures usually end up costing more than originally expected. For instance, if the Canadian company acts as the banker for the Chilean operation, it must implement financial contingency plans.

Empresa Nacional del Petróleo (ENAP)

ENAP is the national petroleum company, responsible for all of Chile's petroleum production. Production has been falling steadily, and by 1994 stood at only 10,000 barrels per day. *ENAP* operates two refineries, *Concepción* and *Concón*. Expansion programs at both refineries are expected to reduce imports of diesel fuel and propane. The company operates 22 offshore wells in the Straight of Magellan and 33 oil terminals. *ENAP*'s principal needs are for technologies to prevent and clean up oil spills.

Electricity Producers

There are four separate, interconnected electrical generation systems. *Sistema Interconectado Central (SIC)*, in the central region is the largest, supplying 90 percent of the nation's electricity. In the north, *Sistema Interconectado del Norte Grande (SING)* is the principal supplier of electricity to the mining and industrial companies in the region. Two smaller systems, *Sistema Eléctrico de Aysén* and *Sistema Eléctrico de Magallanes*, serve the south.

Private electricity companies make up most of the market, but one new power plant is being built through a joint venture between *ENAP* and American-based Foster Wheeler Power Systems. The largest power generating companies are *Chilgener*, *Endesa* and *Colbún*.

A new natural gas pipeline, known as *GasAndes*, is currently being built between Argentina and the Santiago area. Future thermoelectric power projects will burn this fuel. This will reduce the energy sector's overall emissions, but it will create demands for new types of equipment.

Manufacturing Companies

As the new regulations come into force, manufacturing companies are also becoming major customers for pollution control equipment. In Chile, secondary manufacturing is usually referred to as "industry" to distinguish it from those sectors based on natural resources. A large proportion of manufacturing enterprises are located in the Santiago area, where their emissions contribute to the city's serious air and water pollution problems. These operations will constitute a larger part of the market as new regulations are gradually applied to smaller companies.

Sociedad de Fomento Fabril (SOFOFA), Chile's major industry, represents those companies that are responsible for about 85 percent of Chile's industrial output. Anibal Mege Thierry, *SOFOFA's* environmental manager, says that air quality has improved because the particulate norm of 112 milligrams per cubic metre has "really been enforced." He adds that the new norms scheduled to be implemented in 1997 will likely be the impetus for a wave of environmental upgrades. New regulations will also require that solid wastes be disposed of properly for the first time. "Before," he says, "they threw solid waste 'wherever' — or in very bad landfills."

Forest Products Companies

Most of Chile's forestry operations are privately owned. Some 1.5 million hectares of public forest are controlled by the *Sistema Nacional de Áreas Silvestres Protegidas (SNASPE)*. The *Corporación Nacional Forestal (CONAF)*, the National Forestry Association, regulates private sector forestry practices. There are substantial government subsides for certain forest management practices.

Forestry companies have generally been slow to make environmental issues a priority. As a result, there has been no major study of the industry's needs. As in other sectors, new regulations will gradually change this situation as they become enforced.

Major Forestry Companies in Chile

Aserraderos Copihue	Forestal Milallemu
Celco	Forestal Mininco
Celulosa Arauco y Constitución	Forestal Rio Vergara
Cholguan	Maderas y Sintéticos
Compañía Manufacturera de Papeles y Cartones	Proyectos Forestales
Forestal Industrial Santa Fe	Tasman-Chile

Source: Canadian Embassy, Santiago, 1996

Regulatory Bodies

Chile's environmental regulatory bodies are not only the main force driving the market for new technologies, they also represent important potential customers. Their principal needs are for technical assistance for monitoring and assessment, as well as the development of new environmental standards.

Regulatory bodies include *Comisión Nacional del Medio Ambiente (CONAMA)*, National Commission for the Environment, as well as the environmental units in 15 ministries. The most important are the environmental departments of the *Ministerio de Minería*, Ministry of Mines and the *Ministerio de Obras Públicas*, Ministry of Public Works.

The regulatory agencies are generally active proponents of technology transfer. For example, the *Comisión Nacional de Reglamento de la Región Metropolitana*, part of *CONAMA*, has coordinated air quality studies and contamination studies with American, Swiss, German and Brazilian firms. They collaborate with government and private institutions that are working in the same area as *Comisión Especial de Descontaminación de la Región Metropolitan (CEDRM)*, Special Commission for Decontamination of the Metropolitan Region.

Public Works Authorities

The Advantage of Superior Technology

Turbotak Air Pollution Control Systems

Turbotak is a small company based in Waterloo, Ontario. Like many new technology companies in Canada, it was the offspring of university-based research, and it took several years before the research began to pay off in the form of commercial products. But eventually, its high-technology products found markets in a number of countries, including Chile.

Since 1978, Turbotak has supplied air pollution control and gas conditioning systems for a wide range of industries, including general manufacturing. The first installation of Turbotak's equipment in Chile resulted from an order from H.A. Simons in Vancouver, as part of a new pulp mill in Arauco. Since then it has developed a regular line of business in Chile and is represented by *SK Ecología*, a Chilean consulting firm in the environmental services area.

SK Ecología had surveyed international markets for air pollution control technologies that could be used in Chile, and selected Turbotak's technology because of its superior performance. The two companies first met at Globe '92, a trade fair in Santiago for the environmental industries and commenced a series of negotiations that led to an agreement later that year.

Turbotak's experience is that business practices in Chile are similar to those in Canada. Competition is mainly from American and German companies, and most clients are highly sensitive to price. When updated emissions legislation begins to be enforced in 1998, performance issues will become more important, and Turbotak expects steady business from Chilean clients over the next few years. Canadian environmental products and services are highly regarded in Chile, and while the Chilean market is not large at the moment, it is likely to grow steadily in coming years. Turbotrak executives believe that Canadian companies which plan their entry into this market carefully are likely to do well.

Empresa Metropolitana de Obras Sanitarias (EMOS)

EMOS, the Metropolitan Regional Sanitary Works Company, is a state-run enterprise charged with supplying and distributing drinking water as well as collecting and treating sewage and industrial liquid residues in the Santiago Metropolitan Region. *EMOS* is a branch of *Corporación de Fomento de la Producción (CORFO)*, the National Development Agency.

EMOS supplies most of Santiago's drinking water through a distribution system that serves more than one million households. The company also covers 97 percent of the Metropolitan Region's sewage collection needs. In 1995, *EMOS* added 111 kilometres of sewage collection pipelines to the 5,944 kilometres it previously operated. In 1995, 383 million cubic metres of sewage waste were collected by *EMOS*, a growth of 2.2 percent over the previous year.

By law, *EMOS* is required to treat sewage waste before discharging it into natural waterways. So far, the law has not been enforced and only one small treatment plant is in operation.

Since 1990, however, the company has begun to take the first steps to decontaminate sewage waste before it enters the natural waterways. A series of interceptors and water collectors are currently being built parallel to the waterways. These collectors will divert river water to future treatment plants, which will be contracted to the private sector under build-operate-transfer (BOT) arrangements. *EMOS* aims to treat 100 percent of the region's sewage waste by 2009.

Empresa Metropolitana de Residuos (EMERES)

EMERES is the waste-disposal company which operates landfills for 21 of the 36 municipalities in the Santiago Metropolitan Region and 10 others in Renca. Its landfills are rapidly becoming filled. One was shut down in 1995, and a few more are expected to close soon. Annual collections average approximately 90,000 tonnes of solid waste in the Metropolitan Region and about 40,000 tonnes in Renca. The company does not handle or dispose of hazardous waste. Although the *EMERES* board includes the mayors of the regional municipalities, it is privately incorporated and subject to regulation as a commercial company.

There is opposition to the creation of new landfills in the Metropolitan Region, and only one new landfill has been authorized. *EMERES* is calling for national and international proposals for new waste disposal alternatives. It is interested in methods such as composting, percolation and recycling. The company is also planning to conduct public education programs and to provide street waste receptacles.

COMPETITORS

Competition for high-technology products comes mainly from the United States, Japan and Europe. But Chile has strong engineering and metalworking firms that represent good candidates for joint venture partners.

It is difficult to quantify the environmental equipment market because most of the products used are not classified specifically as "environmental" in official production or trade data. Chile has a well-developed metal-working industry which can produce local components for use with imported technology. But virtually all advanced equipment is imported. For example, the CMS Group, of Concord, Ontario, has sold its wastewater treatment plants in Chile. Major mechanical components and installations, comprising about half the value of the finished product, are subcontracted to Chilean firms. High technology components are imported from Canada. Other Chilean companies sell foreign technology under licence.

Another difficulty in assessing market shares is that a large proportion of the market consists of services which are not recorded in the foreign trade data. The most important environmental consulting firms in Chile are Dames & Moore and *Tecnologías y Servicios Ambientales (TESAM)*. Dames & Moore is a large multinational corporation which can draw support from its affiliates around the world. *TESAM* is a joint venture that includes a large Chilean component, with support from Canada's Roche and American-based Radian. According to observers, Chilean consultants cover several disciplines and make up about two-thirds of *TESAM*'s resources. Foreign specialists contribute to specific projects. Neither Dames & Moore nor *TESAM* are tied to particular equipment suppliers. Steffen, Robertson and Kirsten (SRK) is a new joint venture with South African participation.

Part of the market is captured by general engineering firms that offer environmental expertise as part of larger projects. *CADE-IDEPE*, *Geotécnica*, *Arze y Recine* and *CIMM* are key Chilean organizations. Their greatest strength is in the civil engineering components of infrastructure projects. A number of Canadian engineering firms, including Simons, Agra and SNC Lavalin are also active in Chile. The latter has established a local subsidiary called *SNC Lavalin Chile*. The best-known foreign competitors are Bechtel, Fluor Daniel and Davy, all of which have access to world-class technologies.

Canada is among several countries with government programs designed to encourage the transfer of environmental technology to Chile. A Memorandum of Understanding on Environmental Cooperation was signed in January 1995

ALTECH ENVIRONMENTAL CONSULTING

ALTECH Environmental Consulting of Willowdale, Ontario, is a small company, founded in 1986, with about 15 employees. The company's work is primarily in health and safety, air and water emission monitoring, toxicology, and ventilation. ALTECH has extensive experience in most industrial sectors.

ALTECH has significant overseas experience, and has completed several projects in Chile. The company has been directed to a lot of its overseas work through the Canadian International Development Agency (CIDA), which maintains a register of Canadian environmental companies and their capabilities.

Alex Keen, the executive manager at ALTECH, says that the company is often approached by Canadian companies doing business in foreign countries because of its track record in Canada. This is how it got involved in Chile. One of its recent Chilean ventures, for instance, was for an acid leaching house for a mining operation. ALTECH was hired for this project through another Canadian company, Desom Environmental Services of Toronto, which has been active in Chile for many years.

ALTECH currently has no agent in Chile, and has no plans to acquire one. The company works primarily through Canadian companies with which it is already doing business. As Keen puts it: "We didn't pick Chile, they picked us."

It is ALTECH's practice to contact the Department of Foreign Affairs and International Trade (DFAIT) before it goes overseas to get full benefit from the department's expertise. As Keen notes, "We use the Canadian Embassy and its staff a lot. They are extremely helpful and diligent. I can't say enough about the people in the Canadian embassies around the world."

between the two governments. German environmental specialists are working closely with *Sociedad de Fomento Fabril (SOFOFA)*, Chile's major industry association. The Japanese International Cooperation Agency (JICA) loaned nine specialists to *Comisión Nacional del Medio Ambiente (CONAMA)*, National Commission for the Environment, to assist in developing the Industrial Solid Waste Master Plan for Chile. Japan will also provide US $8 million worth of computers for a state-of-the-art pollution monitoring centre in La Reina, to open in January 1997. Other European suppliers have also received support from their governments to promote their products in Chile.

Trends and Opportunities

New environmental regulations, combined with privatization policies, are rapidly bringing new technologies to Chile.

Chile has an outstanding record of sustained economic expansion, with gross domestic product (GDP) growth averaging 7 percent over the 10 years ending in 1995. By the late 1980s, it became apparent that this growth had been achieved at the cost of substantial environmental damage. A new environmental regulatory framework was developed. In 1994, an implementation process for new standards, that will continue for several years, was begun.

For the most part, the new regulations resemble those of developed nations. Most observers believe that the new laws will be rigorously enforced — a sharp contrast with experience elsewhere in Latin America. Government policies of privatization and encouragement of foreign investment are also leading to better compliance, since state enterprises have traditionally been the nation's worst polluters.

These developments are driving a rapid increase in the demand for environmental equipment and services. According to one estimate, the consulting market will see a one-time 50 percent increase followed by medium-term growth at double the rate of GDP.

Mining

Officials of *Sociedad Nacional de Minería (SONAMI)*, Chile's private mining industry association, say that the biggest opportunities for Canadian companies are associated with the reduction of air and water pollution by Chile's state-owned copper mines. New foreign-owned mines already meet developed-country standards. Regulatory attention will gradually move to smaller mines. This will drive a continuing market for cost-effective solutions, as well as assessment and feasibility work.

Corporación del Cobre de Chile (CODELCO), the state-owned copper mining company, has targetted its three smelters at Caletones (*El Teniente*), Potrerillos (*El Salvador*) and Chuquicamata as a priority of the environmental plan. *CODELCO* has set an objective of capturing more than 95 percent of gaseous pollutants, mostly sulphur dioxide and arsenic, from its smelters over the next 12 years. *Empresa Nacional de Minería (ENAMI)*, Chile's state-owned mining and smelting company's biggest problems are at its *Paipote* smelter.

The second largest environmental problem *CODELCO* faces is the deposit of tailings, which are both liquid and semi-solid depending on the operation. The company is looking for alternative sites for new tailings dams. A more complicated problem is solid waste containing arsenic, which unlike sulphuric acid, cannot be sold.

Training and expertise is another area where Chilean firms will be looking for outside help. Operators, engineers and executives need to understand the design, installation and maintenance of new systems and learn about general environmental management practices.

Forestry

According to officials of *Instituto Forestal (INFOR)*, Forestry Institute, the clearest opportunity for Canadian firms in the forestry sector is helping the industry assess its own needs. For new projects, this will come partly in the form of the environmental impact studies that are now mandatory. Environmental auditing is still a young industry in Chile, with companies like *CELCO* and *Forestal Milallemu* being some of the first to use it.

These services should logically precede major outlays on environmental equipment or other advanced forestry technology. *INFOR* officials think that the similarity between British Columbia's forest conditions and those in Chile's southern areas of Collaique and Magallanes, should lead to greater opportunities for technology transfer. *INFOR* officials visited British Columbia as part of Canada's Globe '96 conference.

Focus on Niche Markets

Ariel Geomatics Incorporated (AGI)

AGI is a small company in Dartmouth, Nova Scotia, with six employees. Founded in 1993, it is the owner and operator of a Compact Airborne Spectrographic Imager (CASI). This is a sophisticated airborne sensor which allows specific spectral phenomena to be measured and monitored. The equipment is highly transportable, and can be mounted on any aircraft fitted for the purpose. With this equipment, AGI can provide processed data on computer compatible media for direct use in computer-based processing systems.

AGI's experience in Chile illustrates the importance of having a strong market niche and leading edge technology. In Chile there are few real competitors for the specialized services that AGI can provide. They have begun to target the forest industry as a major client, but their work over the past few years has also covered a number of other areas. This has included remote sensing for water quality monitoring, resource management and agricultural irrigation.

AGI was first approached in the early 1990's by Industry Canada to participate in a trade mission to Chile. In the process, AGI was introduced to *Meridian Enterprises*, a company which has since become its agent in Chile.

Herb Ripley, AGI's senior principal, says the company sees Chile as a beachhead for expansion into neighbouring countries. "We're there for a long time," Ripley says. He expects that AGI will have its own office in Chile soon. It will consist of a combination of Canadian and Chilean staff. He expects no problem in recruiting Chilean employees, because of the high standards of the Chilean educational system and the sophistication of the technical community.

In his view, Ripley says that the Chilean market for environmental products and services is like the Canadian market was 20 years ago. There are a lot of environmental issues to be dealt with, but the Chilean government is rapidly coordinating and consolidating the environmental effort. There is likely to be room for a lot of growth over the next few years.

Manufacturing

New manufacturing plants generally solve environmental problems through cleaner process technologies. But existing plants will soon be confronted by new environmental regulations and will require "end-of-pipe" solutions. Norms for the disposal of wastewater into sewers have been developed and will soon be released. And as new municipal sewage treatment facilities are built, constant monitoring will be conducted. An official from *Empresa Metropolitana de Obras Sanitarias (EMOS)*, the Metropolitan Regional Sanitary Works Company, pointed out that since there is virtually no sewage treatment done at present, there has been no reason to monitor the content of industrial wastes discharged into the sewer system. But toxic wastes could interfere with the operation of new treatment facilities. Aside from enforcement of new standards, *EMOS* will require sophisticated monitoring technologies to protect its own equipment. Manufacturing companies will have to match these monitoring capabilities if they want to continue using the sewer system.

Chief among the environmental demands in this area will be primary treatment centres to neutralize industrial water and remove heavy metals like lead and mercury. The leather industry and factories which include painting processes will have some of the greatest demand for these services, according to an official from the *Sociedad de Fomento Fabril (SOFOFA)*, Chile's major industry association. Other potential clients are producers of canned fruits and preserves, whose use of caustic sodas to skin fruit results in wastewater with a high pH level. There will be substantial demands for tailor-made solutions for small plants.

Urban Pollution

Sewage

The most important opportunities in the waste treatment field are associated with the modernization of Santiago's sewage treatment system. The first plants have been experimental but three major projects are due to go to tender soon. Officials from *Empresa Metropolitana de Obras Sanitarias (EMOS)*, the Metropolitan Regional Sanitary Works Company, say that all three will be 20- to 25-year build-operate-transfer (BOT) concessions. Costs will be recovered from user fees.

A Chilean-British joint venture is nearing completion of a system of collectors parallel to the Mapocho River. River water will be diverted into collectors and then treated by one of three proposed plants. The first, to be completed by 1999, will treat the sewage waste from south Santiago. The second plant, to be finished by 2004, is known as *Zanjón de la Aguada*. *EMOS* aims to conclude the program in 2009 with the construction of the Mapocho River Plant. *EMOS* believes the three plants will cost a total of about US $1 billion.

EMOS officials say that practically every element needed to design, build and operate the plants, from technical studies to water pumps, will have to be imported from the US, Europe or Canada. *EMOS* has contracted the American consulting firm, Black and Veatch, in conjunction with the Chilean company, *ICSA*, to design the overall waste treatment program. The American company will define the underlying technologies, but will not specify the brand or origin of the equipment.

Additional plants are proposed or under construction in other parts of the country. In the future, activated sludge technology is likely to be used to treat large volumes of wastes. Bidders are encouraged to make creative use of the available technologies. Outside of Santiago's Metropolitan Region, international bids are solicited by *Corporación de Fomento de la Producción (CORFO)*, the National Development Agency.

Air Pollution Control

Emissions from motor vehicles are the major source of air pollution in Santiago's Metropolitan Region and new regulations are driving demand for related automotive and monitoring technologies. Most of the demands are for automotive rather than environmental technologies.

There will also be associated demands for mobile and fixed inspection control stations. The city now conducts spot emission checks in the street, and there are plans for *plantas de revisión técnicas*, inspection stations, for automobiles. In 1995, the government held an international bidding process for several of these stations. Companies from Germany, Spain, Italy and Israel presented bids, along with a few Latin American firms. The stations will be operated under six-year build-operate-transfer (BOT) schemes. According to government officials, international firms are at a disadvantage because of high costs and a lack of knowledge of the Chilean regulatory system. The officials believe that inter-governmental exchanges with Canada, Germany and France could lead to technology transfers to Chilean firms.

Environmental Activism in Chile

The Santiago-based *Red Nacional de Acción Ecológica (RENACE)*, National Ecological Action Network, is an umbrella group of 150 non-governmental environmental organizations. Prominent members include Greenpeace and the Environmental Conflict Observatory. The larger organizations collaborate on a regular basis with Canadian environmental groups.

A group of activists were interviewed for this handbook. Like their counterparts in other countries, they were harsh in their criticism of the government's "short-sighted focus on growth for growth's sake." They are particularly critical of the 1994 *Ley de Bases del Medio Ambiente*, Basic Law on the Environment, which they regard as merely a showpiece intended to overcome international opposition to Chile's participation in trade agreements.

The activists said that the environmental impact evaluation system has been used to give legitimacy to questionable projects. They note that only three of 140 projects that have so far submitted environmental impact statements have been rejected. These were proposed landfills in Santiago. The other 137 were natural resource exploitation projects.

They are also concerned over the lack of autonomy of *coremas*, the Regional Environmental Commissions. They complain that the *coremas* operate on political criteria, and since 80 percent of their members are appointed by the federal government, projects favoured for financial reasons are unlikely to be rejected.

Environmental activists also believe that the environmental impact studies (EIS) evaluation system does not allow for adequate citizen participation. Local communities lack the resources to respond to environmental impact studies in the 120 days allowed by the law. There is also no mechanism in place yet for citizens to demand that existing standards be enforced.

Some environmentalists believe that the Chilean government will eventually improve environmental legislation because it wants to increase its participation in international trade. As one activist put it: Chile will have to "play by the rules of the game" to fully participate in global trade.

Solid Waste Control

There are currently only limited hazardous waste treatment facilities in Chile. Toxic material is mostly dumped in municipal landfills along with residential waste. A few hospitals have incinerators for biohazardous waste, but they have been limited by very stringent restrictions on their emissions. This creates opportunities for alternative technologies.

La Reina is the only municipality to operate a recycling program. This program has succeeded in reducing waste disposal costs. But it has suffered from low prices for recycled materials, and it has survived partly through advertising on recycling containers. According to a *Ministerio de Salud (MINSAL)*, Ministry of Health, study of 400 manufacturing companies, only about 10 percent of industrial solid waste is recycled.

Environmental Impact Assessments

Due to voluntary compliance by companies anticipating new standards, a substantial market for environmental assessments developed prior to the implementation of the new laws. For projects costing more than US $5 million, evaluations greatly expedite the granting of permits, even though they are not yet legally required. Formal environmental impact studies or impact statements will soon be mandatory. Since Chile's environmental consulting industry is relatively new, this creates important opportunities, especially for joint ventures.

Urban and Regional Planning

When the most serious environmental problems in Chile were identified in 1991 by *Comisión Nacional del Medio Ambiente (CONAMA)*, National Commission for the Environment, a little-noticed item was "lack of recreational areas and parks." Today, *CONAMA* talks in terms of *ordenamiento territorial*, loosely translated as land-use planning or urban and/or regional planning.

This concept focusses on organizing how different human activities such as housing, industry and commerce can successfully co-exist. This is a relatively new concept in Chile and there is a lack of professional expertise. One *CONAMA* official says that land use is fast becoming a priority area for the country's environmental regulators, and there will be a demand for foreign consultants in the near future.

The Regulatory Environment

Comisión Nacional del Medio Ambiente (CONAMA) National Environmental Agency Makes Sense of Regulatory Jungle

The Chilean government will be generating more and stricter environmental standards over the next five years. Officials of the *Comisión Nacional del Medio Ambiente (CONAMA)*, National Commission for the Environment, say that Chile's "jungle" of environmental regulations, legislation and standards will not necessarily be turned into a neatly groomed garden. But *CONAMA* hopes to coordinate them so that they become more easily enforced.

CONAMA decided not to attempt a complete overhaul of the existing environmental regulatory framework because it would have been too time-consuming and costly. Instead, it embarked on a systematic review of rules and standards. This made it practical to revise and coordinate them, and to gain a clearer picture of needed improvements.

In October 1995, the government passed the *Reglamento de Normas Ambientales*, Regulations for Environmental Standards, which sets out procedures by which *CONAMA* will carry out this work. Future standards will have a more substantial scientific basis and the procedures will give greater voice to advisory councils made up of citizens' groups, business and non-governmental organizations.

Parallel to this process, *CONAMA* will be drafting "decontamination plans," which focus on reducing atmospheric pollution. *CONAMA* will provide industries with a timeline by which they must comply with increasingly lower, allowable emission levels until reaching a final target level. Each company is responsible for developing its own strategy for achieving the lower emission levels. *CONAMA* will initiate the majority of these programs between 1996 and 2001.

In response to growing public pressure to take drastic measures to immediately reduce the air pollution levels in the Santiago Metropolitan Region, *CONAMA* unveiled an ambitious plan that included some 260 different anti-pollution measures; it will begin implementation by June 1997.

Source: Interviews with senior officials from *Comisión Nacional del Medio Ambiente (CONAMA)*, National Commission for the Environment, and other government agencies.

In some respects, Chile's new environmental laws were patterned on the American Environmental Protection Act (EPA). But the framework does not include a centralized enforcement authority.

Chile's environmental regulation system has been substantially revamped since 1990. In that year, the government created the *Comisión Nacional del Medio Ambiente (CONAMA)*, National Commission for the Environment. It was given responsibility for developing a consistent framework for Chile's myriad of environmental regulations. Previously, environmental policies had been handled independently by each ministry. According to *CONAMA*, Chile has 911 environmental laws that contain 2,700 separate provisions.

As a result of *CONAMA*'s work, a new environmental law was enacted in March, 1994. The *Ley de Bases del Medio Ambiente* is officially translated as the Basic Law on the Environment. It is often described in English as the Environmental Framework Law, or the General Environmental Base Law.

CONAMA is accountable to the president of Chile through the secretary general. The principal functions of the commission are to review environmental assessments, to develop official norms and to determine enforcement procedures. Administration and enforcement remains in the hands of individual ministries. To coordinate the activities of all of these separate agencies, *CONAMA* is directed by a governing council with representation from nine ministries. *CONAMA* also maintains a consultative council made up of academic, business and labour representatives. Regional commissions known as *coremas* are also part of the *CONAMA* structure. They incorporate representation from local governments, scientists and private sector organizations. The current priority of *CONAMA* is to review all existing environmental regulations and to propose changes to bring them into line with the principles of sustainable development. In response to the new Canada-Chile Agreement on Environmental Cooperation, over the next two years, the Chilean government is undertaking a major modernization of its environmental laws in order to remove out-dated legislation and to ensure the remaining regulations are enforceable.

CONAMA did not replace the existing legal structure for the issuance of regulations. Although the *Ley de Bases del Medio Ambiente* was reportedly patterned after American legislation, there is no centralized enforcement authority. There are some 70 government departments and agencies with some type of environmental responsibility and 15 ministries have environmental units. The *Ministerio de Salud (MINSAL)*, Ministry of Health, is the only one that can submit laws affecting human health to the Chilean Congress. Other government entities act by issuing *normas*, standards, or through decrees signed by the president.

The *Instituto Nacional de Normalización (INN)*, National Standards Institute, is responsible for issuing official norms such as those setting national limits of contaminants in drinking water. These and other environmental regulations are given legal force by "Decree Laws" which authorize specialized "Supreme Decrees." These are too numerous to discuss in detail here. The goal of *CONAMA* is to rationalize this system, and to base the decrees on consistent policies, but not to replace the underlying regulatory mechanisms. New regulations are being introduced gradually, and many of them will not take full effect until the end of the century.

An example of this legislative approach is Decree Law number 185, of 1992. It identifies mining emissions as the main cause of sulphur pollution. It regulates new and existing mining operations that emit three tonnes or more of sulphur dioxide, or one tonne or more of particulate matter. Under this law, several Supreme Decrees have been issued to regulate specific mining operations. Number 180, published in October 1994, for example, approves the decontamination plan for the *Paipote* smelter of *Empresa Nacional de Minería (ENAMI)*, Chile's state-owned mining and smelting company. It requires that the operation reduce its sulphur emissions from 2,200 tonnes per month in 1995 to 1,666 in 1999, and to comply with official standards thereafter. No improvements are required before 1998.

Better environmental education is also a recognized priority. In 1995, Chile obtained a grant of US $1.9 million from the Multilateral Investment Fund to promote compliance with environmental regulations. The funds will be used to train environmental regulators, conduct a public education program and support the development of training programs by private companies.

Experience elsewhere in Latin America has demonstrated that the letter of the law cannot be used to describe the effect of government regulation on environmental markets. Matters of interpretation and enforcement have a large effect and it is too early to make such judgements in Chile's case. The full text of the *Ley de Bases del Medio Ambiente* is available in English from *CONAMA*.

Market Entry Strategies

Partnering with Chilean firms is considered the most effective way of entering the Chilean market. Government-sponsored technical exchanges are an ideal tool for introducing new technologies.

In the competitive Chilean environment, a local presence is essential. Most successful foreign firms either establish a joint venture or partnership with a local firm, or they open an in-country office. Either way, the creation of long-term relationships is essential.

Interviews with key participants in Chile's environmental sector revealed a consensus that, while Canadian firms are very well respected, they will have to take a higher profile to take full advantage of the opportunities.

Ramiro Trucco, a consultant for *Comisión Nacional del Medio Ambiente (CONAMA)*, National Commission for the Environment, places Canada among the leaders of the Chilean environmental sector along with Britain, Sweden and Japan. He says Canada provides an example of well-developed environmental legislation that is upheld by industry. Trucco named SNC-Lavalin, Roche International, Simons and ADI International as Canadian companies with a strong presence in Chile.

Other observers were generally aware of Canadian capabilities but stressed the need for potential suppliers to establish name-recognition now, while major plans are still in a state of flux. For example, Alfredo Unda, head of environmental division of the *Instituto Forestal (INFOR)*, Forestry Institute, says that now is the time for companies with environmental expertise to make their capabilities known. Competitors are arriving from all over the world. In May and June 1996 alone, he says, *INFOR* had visitors from Canada, Sweden, South Africa and China. But individual buyers are not as well informed. He thinks that many of them are not fully aware of available technologies.

These views were echoed by Anibal Mege Thierry, environmental department manager of *Sociedad de Fomento Fabril (SOFOFA)*, Chile's major industry association, who also stresses the need for joint ventures. In order to sell environmental equipment in Chile, he says, "It's indispensable to have a partner here." Mege adds that Chilean companies are open to partnerships with Canadian firms because they perceive them as highly advanced in environmental matters. More importantly, Canada's many investments in Chile have established its credibility, particularly in the mining and forestry sectors.

Technical Seminars

Sales of Canadian environmental equipment and services to Chile usually involve some form of technology transfer. The Canadian and Chilean governments have been active in promoting these. Participating in government-sponsored technical

Regional Environmental Commissions

Project Approvals Include Regional Political Factors by Design

Environmental impact studies (EISs) are now mandatory for all development projects. A new law, signed by President Eduardo Frei in May 1996, makes an environmental evaluation obligatory for virtually every project, public or private.

The law divides projects into two categories. Those deemed to have a significant impact on the environment will be required to conduct a full EIS. Those with little impact on the environment must make a less-comprehensive "environmental declaration." All new projects, with a few exemptions, will have to do one or the other.

The procedure at the *Comisión Nacional del Medio Ambiente (CONAMA)*, National Commission for the Environment, for reviewing and approving these environmental impact studies has come under fire recently. Regional environmental commissions, *coremas*, which are part of the *CONAMA* structure, are ultimately responsible for approving, rejecting or establishing conditions for approval of the EISs. The *coremas* have been criticized for lacking the technical sophistication and the political independence to make appropriate decisions.

For example, the Region XII *corema's* recent approval of Trillium's *Río Cóndor* forestry project in Tierra del Fuego was been harshly criticized by environmental organizations, area residents and, in some cases, legislators.

In 1996, the Region V *corema* approved a controversial project by *Negocios Forestales*, an affiliate of the coal mining company Schwager, to use an abandoned coal mine as a toxic waste dump. The project was later determined to be illegal and shut down, but only after the company had deposited 400 barrels of waste from an oil refinery.

In an interview, *CONAMA* responded to criticisms of the organization's decentralized structure. They acknowledged that the design of the system presupposes technical expertise that does not exist, and agreed that this is a weakness in the system. But they pointed out that the approval process was always intended to be political.

continued on next page

Regional Environmental Commissions

Project Approvals Include Regional Political Factors by Design

continued from page 35

CONAMA went on to explain that the *coremas* were not designed to make strictly technical decisions. The legislators believed that for the law to be workable, the decisions had to reflect a broad political and social consensus. The system is, therefore, specifically designed to give voice to regional interests.

According to *CONAMA*, while this may be an imperfect process, it is an accurate reflection of what the Chilean politicians were prepared to accept in 1993 to 1994 when the law was drafted. Moreover, it is not likely to be questioned seriously — at least until after the 1999 presidential elections.

Meanwhile, the lack of technical expertise among the *coremas* is being addressed by a US $975,000 fund set up to train *corema* workers in the assessment of EISs.

seminars and technology demonstrations is an excellent way for Canadian companies to gain exposure.

In January 1995, Industry Canada and Environment Canada signed a Memorandum of Understanding (MOU) on Environmental Cooperation with Chile. The primary objectives of the MOU are the promotion of the Canadian approach to environmental management and the multi-stakeholder process, development of appropriate norms and standards, expansion of opportunities for Canadian companies and technologies and applied research capabilities, and the fostering of future and continued cooperation in multilateral fora on global issues such as climate change and biodiversity. The two governments have selected a few priorities for their cooperation; they include: mining, waste management, clean technologies and technical assistance to *CONAMA*.

In March 1996, Industry Canada and Environment Canada led a seminar on environmental regulations and enforcement. *CONAMA* sent two representatives from each *corema*, regional environmental commission. The Canadian experience in mining and forestry was of particular interest to the Chilean professionals.

The *Sociedad Nacional de Minería (SONAMI)*, Chile's private mining industry association, held a seminar in May 1996 together with Canadian experts in the environmental sector. Working groups were formed and a timetable was drawn up. A follow-up seminar took place in October 1996. Another result was the formation of a group to study waste management in the mining sector, specifically the use of tailings dams.

In the area of water regulation, two Canadian scientists shared their know-how in Santiago in January 1996. Chilean professionals working on environmental concerns in the southern regions of Puerto Montt and Llanquihue Lake attended. The seminar focussed on the management of water resources in cases where there are competing interests. In the Llanquihue region, for example, the tourism, aquaculture, fishing, agriculture and urban waste sectors all compete for water.

Canadian specialists in the development and enforcement of environmental regulations are working with Chilean officials to share their experience, in particular in the the water and air sectors. Furthermore, *CONAMA* is studying Canada's use of financial incentives to encourage businesses to invest in environmentally sound processes and technologies.

Canada has also supported workshops on biodiversity and model forests. Chile could be the first South American country to implement a model forest following the Canadian example of sustainable forests. Finally, the *Instituto Forestal (INFOR)*, Forestry Institute, is receiving Canadian assistance in conducting a comprehensive forestry inventory.

Where to go for Additional Assistance

Canadian Government Departments and Services in Canada

Department of Foreign Affairs and International Trade (DFAIT)

DFAIT is the Canadian federal government department most directly responsible for trade development. The **InfoCentre** should be the first contact point for advice on how to start exporting. It provides information on export-related programs and services, acts as an entry point to DFAIT's trade information network, and can provide copies of specialized export publications and market information to interested companies.

InfoCentre
Tel.: 1-800-267-8376 or (613) 944-4000
Fax: (613) 996-9709
FaxLink:* (613) 944-4500
Internet: http://www.dfait-maeci.gc.ca

*FaxLink is a faxback system which provides summaries on a range of Chilean markets. It must be contacted through your fax machine. Dial from your fax phone and follow the voice prompt instructions.

The Latin America and Caribbean Bureau promotes trade with Chile. There are several trade commissioners at the Embassy of Canada in Santiago. Trade commissioners can provide a range of services including introducing Canadian companies to potential customers in Chile, advising on marketing channels, assisting those wishing to participate in trade fairs, helping to identify suitable Mexican firms to act as agents, and compiling strategic business intelligence on potential foreign customers.

Latin America and Caribbean Bureau (LSR)
Department of Foreign Affairs and International Trade
Lester B. Pearson Building
125 Sussex Drive
Ottawa, ON K1A 0G2
Tel.: (613) 996-5546
Fax: (613) 943-8806

International Trade Centres (ITCs)

International Trade Centres have been established across the country as a convenient point of contact to support the exporting efforts of Canadian firms. The centres operate under the guidance of DFAIT and all have resident trade commissioners. They help companies determine whether or not they are ready to export, assist firms with market research and planning, provide access to government programs designed to promote exports, and arrange for assistance from the trade commissioners in Ottawa and trade officers abroad. Contact the International Trade Centre nearest you:

Newfoundland
International Trade Centre
P.O. Box 8950
Atlantic Place
215 Water Street
Suite 504
St. John's, NF A1B 3R9
Tel.: (709) 772-5511
Fax: (709) 772-2373

Prince Edward Island
International Trade Centre
P.O. Box 1115
Confederation Court Mall
134 Kent Street
Suite 400
Charlottetown, PE C1A 7M8
Tel.: (902) 566-7443
Fax: (902) 566-7450

Nova Scotia
International Trade Centre
P.O. Box 940, Station M
1801 Hollis Street
Fifth Floor
Halifax, NS B3J 2V9
Tel.: (902) 426-7540
Fax: (902) 426-2624

New Brunswick
International Trade Centre
P.O. Box 1210
1045 Main Street
Unit 103
Moncton, NB E1C 1H1
Tel.: (506) 851-6452
Fax: (506) 851-6429

Quebec

International Trade Centre
5 Place Ville-Marie
Suite 800
Montreal, PQ H3B 2G2
Tel.: (514) 283-6328
Fax: (514) 283-8794

Ontario

International Trade Centre
Dominion Public Building
1 Front St. West
Fourth Floor
Toronto, ON M5J 1A4
Tel.: (416) 973-5053
Fax: (416) 973-8161

Manitoba

International Trade Centre
P.O. Box 981
400 St. Mary Avenue
Fourth Floor
Winnipeg, MB R3C 4K5
Tel.: (204) 983-5851
Fax: (204) 983-3182

Saskatchewan

International Trade Centre
The S.J. Cohen Building
119-4th Avenue South
Suite 401
Saskatoon, SK S7K 5X2
Tel.: (306) 975-5315
Fax: (306) 975-5334

International Trade Centre
1919 Saskatchewan Drive
Sixth Floor
Regina, SK S4P 3V7
Tel.: (306) 780-6124
Fax: (306) 780-6679

Alberta
**Edmonton office is also responsible for Northwest Territories*

International Trade Centre
Canada Place
9700 Jasper Avenue
Room 540
Edmonton, AB T5J 4C3
Tel.: (403) 495-2944
Fax: (403) 495-4507

International Trade Centre
510-5th Street S.W.
Suite 1100
Calgary, AB T2P 3S2
Tel.: (403) 292-6660
Fax: (403) 292-4578

British Columbia
**Vancouver office is also responsible for the Yukon*

International Trade Centre
P.O. Box 11610
300 West Georgia Street
Suite 2000
Vancouver, BC V6B 6E1
Tel.: (604) 666-0434
Fax: (604) 666-0954

World Information Network for Exports (WIN Exports)

WIN Exports is a computer-based information system designed by DFAIT to help Canada's trade development officers abroad match foreign needs to Canadian capabilities. It provides users with information on the capabilities, experience and interests of more than 24,000 Canadian exporters. For general information, call (613) 944-4WIN(4946); to register on WIN Exports, call (613) 996-2057, or fax 1-800-667-3802 or (613) 944-1078.

Program for Export Market Development (PEMD)

PEMD is DFAIT's primary export promotion program. It supports a variety of activities to help Canadian companies expand into export markets.

PEMD shares up to 50 percent of eligible expenses. Program financial assistance is a repayable contribution, not a grant, and must be approved in advance. Funded activities include:

- Market Development Strategies, which consist of a package of support for visits, trade fairs, and market support initiatives, under one umbrella of the company's marketing plan.
- New to Exporting Companies, which provides a vehicle for these companies to seek out individual export opportunities, either through a market identification visit or participation in an international trade fair.
- Capital Projects Bidding for specific projects outside Canada involving international competition/formal bidding procedures.
- Trade Association Activities undertaken by non-sales national trade or industry associations on behalf of their member companies.

For general information, call the InfoCentre at 1-800-267-8376. For applications for assistance through this program, call the International Trade Centre nearest you. In Quebec, PEMD is administered by the 13 regional offices of the Federal Office of Regional Development (FORD Q), listed separately below.

International Financing

DFAIT helps Canadian exporters interested in pursuing multilateral business opportunities financed by international financing institutions (IFIs). Canadian exporters and trade associations can access market data, obtain a better understanding of the competition, and determine if an IFI-funded market opportunity is practical and worth pursuing. DFAIT can provide information and advice on the availability of Canadian government-funded assistance programs and can assist companies in developing effective export marketing. For further information, contact:

International Financing Division
Department of Foreign Affairs and International Trade
Lester B. Pearson Building
125 Sussex Drive
Ottawa, ON K1A 0G2
Tel.: (613) 944-0910
Fax: (613) 943-1100

Technology Inflow Program (TIP)

Managed by DFAIT and delivered domestically by the Industrial Research Assistance Program, National Research Council, TIP is designed to help Canadian companies locate, acquire and adopt foreign technologies by promoting international collaboration. Industry Canada (IC) also helps in program promotion. TIP officers respond to requests to identify technology sources and opportunities for cooperation between Canadian and foreign firms. The Program also helps Canadian firms make exploratory visits abroad to identify and gain first-hand knowledge of relevant foreign technologies, as well as how to negotiate to acquire them. For information, call (613) 993-5326.

Environment Canada

The Environmental Technology Advancement Directorate (ETAD) is Environment Canada's primary vehicle in the areas of technology and "know-how." ETAD works in partnership with the Canadian environmental industry, technology suppliers, resource and manufacturing industries, as well as federal and provincial departments, and international organizations to promote the growth of the environmental industry in the drive toward sustainable development in Canada and around the world.

Services range from environmental technology advancement to evaluation, verification, technology transfer and cooperation. In delivering these services, ETAD works closely with Environment Canada's five regional offices. Services offered include:

- national and international capacity building;
- technology partnerships;
- research and development;
- technology demonstration, evaluation and verification;
- scientific and technical information; and
- international environmental youth corps.

ETAD also houses world-class Canadian centres of expertise:

- The Environmental Technology Centre
- Canadian Clean Technology Centre and the Water Technology Centre, operated by the Water Technology International Corporation

For more information please contact:

Environmental Technology Advancement Directorate
Environment Canada
Place Vincent Massey
351 St. Joseph Boulevard
18th Floor
Hull, PQ K1A 0H3
Tel.: (819) 953-3090
Fax: (819) 953-9029
Internet: www.ec.gc.ca

Canada Chile Environmental Cooperation Agreement National Secretariat
Place Vincent Massey
351 St. Joseph Boulevard
16th Floor
Hull, PQ K1A 0H3
Tel.: (819) 953-2295
Fax: (819) 997-0199

Industry Canada (IC)

IC was created with a broad mandate to make Canada more competitive by fostering the growth of Canadian businesses, by promoting a fair and efficient marketplace for business and consumers, and by encouraging commercial ventures in scientific research and technology. In the area of small business, it has been given specific responsibility to:

- develop, implement and promote national policies to foster the international competitiveness of industry; the enhancement of industrial, scientific and technological development; and the improvement in both the productivity and efficiency of industry;
- promote the mobility of goods, services, and factors of production within Canada;
- develop and implement national policies to foster entrepreneurship and the start-up, growth and expansion of small businesses;
- develop and implement national policies and programs respecting industrial benefits from procurement of goods and services by the Government of Canada; and
- promote and provide support services for the marketing of Canadian goods, services and technology.

The regional offices of IC work directly with Canadian companies to promote industrial, scientific and technological development. They help clients recognize opportunities in a competitive international marketplace by providing services in the areas of business intelligence and information as well as trade and market development. IC also promotes and manages a portfolio of programs and services.

The following are areas in which IC regional offices have special competence:

- access to trade and technology intelligence and expertise;
- entry points to national and international networks;
- industry-sector knowledge base;
- co-location with International Trade Centres connected to DFAIT and Canadian posts abroad;
- client focus on emerging and threshold firms; and
- business intelligence.

Environmental Affairs Branch

The goal of Industry Canada's Environmental Affairs Branch is to strike a balance between industrial growth and environmental protection, and to ensure the continued growth of a vital and flourishing Canadian environmental industry in both domestic and international markets. The main responsibilities of this branch are to ensure that the economic impacts of specific environmental regulatory and market-based initiatives are fully considered in the government's decision-making process, to strengthen the long-term international competitiveness of Canada's industrial sectors and to promote the development and exploitation of Canada's environmental technologies and market opportunities. With respect to the environmental industry and technology development, the Environmental Affairs Branch, in cooperation with the departments of Environment, Foreign Affairs and International Trade, and Public Works and Government Services, is responsible for implementing the Canadian Environmental Industry Strategy, which was announced by the Ministers of Industry and Environment in September 1994.

Environmental Affairs Branch
Industry Canada
235 Queen Street
Ottawa, ON K1A 0H5
Tel.: (613) 954-3434
Fax: (613) 952-9564
E-mail: shoemaker.heather@ic.gc.ca

The Environmental Industry Virtual Office

The Virtual Office is a unique partnership between the federal and provincial governments and the private sector. Its mission is to promote and facilitate the growth and development of the environmental industry by providing quick, easy and integrated access to major providers or sources of information, services on research and development, domestic and international markets, investment and financing and human resources. The Internet address is: http://virtualoffice.ic.gc.ca/

Canadian Environmental Solutions (CES)

CES is an award-winning and portable multimedia tool designed to provide an instantaneous response to environmental problems. In a matter of seconds, specific solutions to environmental problems can be found, along with profiles of companies that provide those solutions. Environmental problems are relevant to all sectors of the economy, both domestic and international. Private industry, governments, academics and consultants have all found CES to be a helpful tool. The product is available on CD-ROM, diskettes and the Internet at http://strategis.ic.gc.ca/CES.

Strategis

Canada's largest business web site, Strategis, gives business direct access to the latest information on specific industries, export opportunities, company capabilities, international intelligence and business contacts via the Internet. It also includes information on new technologies and processes, management experts, market services, government programs, micro-economic research and much more. In addition to these information resources, Strategis provides businesses with easy access to Industry Canada experts. Canadian companies will be able to browse the site to find out about market opportunities in Canada and abroad, new state-of-the-art technologies, key alliances, training resources and government programs. The International Business Information Network, one section of the site, contains first-hand information on products in demand, market conditions, competitors and business opportunities abroad.

Strategis
Industry Canada
235 Queen Street
Ottawa, ON K1A 0H5
Tel.: (613) 954-5031
Fax: (613) 954-1894
Internet : http://www.hotline.service@strategis.ic.gc.ca/

Business Service Centre
Industry Canada
235 Queen Street
First Floor, East Tower
Ottawa, ON K1A 0H5
Tel.: (613) 941-0222
Fax: (613) 957-7942

Revenue Canada

Revenue Canada, Trade Administration Branch provides service and information on trade regulations in English, French and Spanish.

Revenue Canada, Trade Administration Branch
555 Mackenzie Avenue
First Floor
Ottawa, ON KIA 0L5
Tel.: 1-800-661-6121, or (613) 941-0965
Fax: (613) 952-0022

Canadian International Development Agency (CIDA)

An important possible source of financing for Canadian ventures in Chile is the special fund available through CIDA under the Industrial Cooperation Program (INC). This program provides financial contributions to stimulate Canadian private-sector involvement in developing countries by supporting long-term business relationships such as joint ventures and licensing arrangements. INC supports the development of linkages with the private sector in Chile by encouraging Canadian enterprises to share their skills and experiences with partners in Chile and other countries. A series of INC mechanisms help enterprises to establish mutually beneficial collaborative arrangements for the transfer of technology and the creation of employment in Chile.

There are five INC mechanisms that help eligible Canadian firms to conduct studies and that provide professional guidance and advice to potential clients. Where a project involves environmental improvement, technology transfer, developmental assistance to women, job training or job creation, early contact with CIDA's Industrial Cooperation Division is suggested. An important CIDA criterion is that the project creates jobs in Chile without threatening jobs in Canada. In fact, most CIDA-assisted projects have produced net increases in Canadian jobs.

Canada-Southern Cone Environmental Technology (CANSCET) Initiative

The CANSCET initiative is a program sponsored by the Canadian International Development Agency (CIDA) through its Canada-Southern Cone Technology Transfer Fund. CANSCET will be administered by Environment Canada through a "Team Canada" approach — a partnership with Industry Canada and the International Development Research Centre's (IDRC's) Regional Office for Latin America and the Caribbean. The goal of CANSCET is to support the transfer of Canadian environmental expertise and know-how, primarily related to waste and wastewater management, to the public and private sectors of Chile, Argentina and Uruguay, with a view to improving environmental performance in the three countries.

For more information, contact:

Industrial Cooperation Division
Canadian International Development Agency
200 Promenade du Portage
Hull, PQ K1A 0G4
Tel.: (819) 997-7906
Fax: (819) 953-5024

Atlantic Canada Opportunities Agency (ACOA)

Atlantic Canadian companies seeking to develop exports to Chile may be eligible for assistance from the ACOA. The Agency works in partnership with entrepreneurs from the Atlantic region to promote self-sustaining economic activity in Atlantic Canada.

ACOA provides support to businesses as they look to expand existing markets through the development of marketing plans. Efforts include monitoring trade opportunities arising from global economic change, communications efforts to promote the region, trade missions and associated activities, as well as better coordination with federal and provincial bodies that influence trade and investment opportunities. For more information, contact:

Atlantic Canada Opportunities Agency
Blue Cross Centre
644 Main Street
P.O. Box 6051
Moncton, NB E1C 9J8
Tel.: 1-800-561-7862
Fax: (506) 851-7403

The Federal Office of Regional Development (Quebec), (FORD Q)

FORD Q is a federal regional economic development organization. Through its commitment to provide services tailored to its clients, FORD Q supports the development of the economic potential of all regions of Quebec and the creation of viable jobs by promoting a business climate in which small- and medium-sized enterprises (SMEs) can grow and prosper. FORD Q uses the relevant and sought-after expertise of the federal government to work with the entrepreneurial spirit of Quebecers in every region and improve their competitive position. It also seeks, through strategic activities and partnerships in the community, to improve the business climate, an essential factor in the growth of SMEs.

FORD Q provides one-stop access to federal services and programs aimed at SMEs, particularly with regard to innovation, research and development (R&D), design, market development and entrepreneurship. Through its 13 Small Business Access Centres, FORD Q provides access to Team Canada export services and programs in the areas of awareness, export preparation, information, networking, advice and counselling, funding and access to funding.

In terms of access to funding, PEMD, with the exception of the component on preparing projects for submission, is delivered through the Small Business Access Centres. IDEA-SME, a FORD Q program, can also support firms during the export process. In addition, through alliances with banks, Small Business Access Centre advisors can facilitate access to funding for foreign marketing strategy projects.

Small Business Access Centre
Abitibi/Témiscamingue
906 5th Avenue
Val d'Or, PQ J9P 1B9
Tel.: (819) 825-5260
Fax: (819) 825-3245

Small Business Access Centre
Bas Saint-Laurent/Gaspésie/Îles-de-la-Madeleine
212 Belzile Street
Suite 200
Rimouski, PQ G5L 3C3
Tel.: (418) 722-3282
Fax: (418) 722-3285

Small Business Access Centre
Bois-Francs
Place du Centre
150 Marchand Street
Suite 502
Drummondville, PQ J2C 4N1
Tel.: (819) 478-4664
Fax: (819) 478-4666

Small Business Access Centre
Côte-Nord
701 Laure Boulevard
Suite 202B
P.O. Box 698
Sept-Îles, PQ G4R 4K9
Tel.: (418) 968-3426
Fax: (418) 968-0806

Small Business Access Centre
Estrie
1335 King Street West
Suite 303
Sherbrooke, PQ J1J 2B8
Tel.: (819) 564-5904
Fax: (819 564-5912

Small Busines Access Centre
Île de Montréal
800 Place Victoria Tower
Suite 3800
P.O. Box 247
Montreal, PQ H4Z 1E8
Tel.: (514) 283-2500
Fax: (514) 496-8310

Small Business Access Centre
Laval/Laurentides/Lanaudière
Tour du Triomphe II
2540 Daniel-Johnson Boulevard
Suite 204
Laval, PQ H7T 2S3
Tel.: (514) 973-6844
Fax: (514) 973-6851

Small Business Access Centre
Mauricie
Immeuble Bourg du Fleuve
25 des Forges Street
Suite 413
Trois-Rivières, PQ G9A 2G4
Tel.: (819) 371-5182
Fax: (819) 371-5186

Small Business Access Centre
Montérégie
Complexe Saint-Charles
1111 Saint-Charles Street West
Suite 411
Longueuil, PQ J4K 5G4
Tel.: (514) 928-4088
Fax: (514) 928-4097

Small Business Access Centre
Nord-du-Québec
800 Place Victoria Tower
Suite 3800
P.O. Box 247
Montreal, PQ H4Z 1E8
Tel.: (514) 283-5174
Fax: (514) 283-3637

Small Business Access Centre
Outaouais
259 Saint-Joseph Boulevard
Suite 202
Hull PQ J8Y 6T1
Tel.: (819) 994-7442
Fax: (819) 994-7846

Small Business Access Centre
Quebec City/Chaudière/Appalaches
905 Dufferin Avenue
Second Floor
Quebec City, PQ G1R 5M6
Tel.: (418) 648-4826
Fax: (418) 648-7291

Small Business Access Centre
Saguenay/Lac-Saint-Jean
170 Saint-Joseph Street South
Suite 203
Alma, PQ G8B 3E8
Tel.: (418) 668-3084
Fax: (418) 668-7584

Western Economic Diversification Canada (WD)

WD is responsible for federal economic development activities in Western Canada. The Department works in partnership with the western provinces, business, industry associations and communities to stimulate the western Canadian economy.

WD's "New Directions" program will work to enhance the export position of western companies by boosting their competitiveness in domestic and global markets.

The Department no longer provides repayable loans to individual companies, but seeks new innovative partnerships within both the public and private sectors. These partnerships will address the needs of small- and medium-sized enterprises for information, business services and capital, particularly for high growth industries critical to Western Canada's economic diversification.

One of WD's new products focused on export development is the International Trade Personnel Program. This federal-provincial initiative links export-focused western firms with recent post-secondary graduates. The program accomplishes two important socio-economic goals: it gives companies the extra person-power they need to penetrate new markets, and it gives recent graduates valuable work experience. Under the new program, the length of export-development projects may vary from one to three years. Approved projects will be eligible for assistance ranging from C $7,500 for one year, to a maximum of C $37,500 per graduate over the three-year period. For more information, contact:

Western Economic Diversification Canada
The Cargill Building
240 Graham Avenue
Suite 712
P.O. Box 777
Winnipeg, MB R3C 2L4
Tel.: (204) 983-4472
Fax: (204) 983-4694

Export Development Corporation (EDC)

EDC helps Canadian exporters compete in world markets by providing a wide range of financial and risk management services, including export credit insurance, financing to foreign buyers of Canadian goods and services, and guarantees.

EDC's products fall into four main categories:

- export credit insurance, covering short- and medium-term credits;
- performance-related guarantees and insurance, providing cover for exporters and financial institutions against calls on various performance bonds and obligations normally issued either by banks or surety companies;
- foreign investment insurance, providing political risk protection for Canadian investments abroad; and
- export financing, providing medium- and long-term export financing to foreign buyers of Canadian goods and services.

EDC has established relationships with leading commercial and public sector institutions in Mexico and Latin America. For more information on the range of services available, please refer to the customer teams below.

Base and Semi-Manufactured Goods Team:
Tel.: (613) 598-2823
Fax: (613) 598-2525

Consumer Goods Team:
Tel.: (613) 597-8501
Fax: (613) 598-2525

Emerging Exporters Team:
Tel.: 1-800-850-9626
Fax: (613) 598-6871

Financial Institutions Team:
Tel.: (613) 598-6639
Fax: (613) 598-3065

Forestry Team:
Tel.: (613) 598-2936
Fax: (613) 598-2525

Engineering and Professional Team:
Tel.: (613) 598-3162
Fax: (613) 598-3167

Industrial Equipment Team:
Tel.: (613) 598-3163
Fax: (613) 597-8503

Information Technologies Team:
Tel.: (613) 598-6891
Fax: (613) 598-6858

Transportation Team:
Tel.: (613) 598-3164
Fax: (613) 598-2504

For information on the full range of EDC services, contact any of the following EDC offices:

Ottawa
Export Development Corporation
151 O'Connor Street
Ottawa, ON K1A 1K3
Tel.: (613) 598-2500
Fax: (613) 598-6858

Vancouver
Export Development Corporation
One Bentall Centre
505 Burrard Street
Suite 1030
Vancouver, BC V7X 1M5
Tel.: (604) 666-6234
Fax: (604) 666-7550

Calgary
Export Development Corporation
510-5th Street S.W.
Suite 1030
Calgary, AB T2P 3S2
Tel.: (403) 292-6898
Fax: (403) 292-6902

Winnipeg
Export Development Corporation
330 Portage Avenue
Eighth Floor
Winnipeg, MB R3C 0C4
Tel.: (204) 983-5114
Fax: (204) 983-2187

Toronto
Export Development Corporation
National Bank Building
150 York Street
Suite 810
P.O. Box 810
Toronto, ON M5H 3S5
Tel.: (416) 973-6211
Fax: (416) 862-1267

London
Export Development Corporation
Talbot Centre
148 Fullarton Street
Suite 1512
London, ON N6A 5P3
Tel.: (519) 645-5828
Fax: (519) 645-5580

Montreal
Export Development Corporation
Tour de la Bourse
800 Victoria Square
Suite 4520
P.O. Box 124
Montreal, PQ H4Z 1C3
Tel.: (514) 283-3013
Fax: (514) 878-9891

Halifax
Export Development Corporation
Purdy's Wharf, Tower 2
1969 Upper Water Street
Suite 1410
Halifax, NS B3J 3R7
Tel.: (902) 429-0426
Fax: (902) 423-0881

National Research Council (NRC)

Canadian companies hoping to succeed in the Chilean marketplace may require additional technology to improve their competitiveness. The NRC works with Canadian firms of all sizes to develop and apply technology for economic benefit. The Council manages the Industrial Research Assistance Program (IRAP), a national network for the diffusion and transfer of technology.

The IRAP network, working primarily with small- and medium-sized Canadian firms, supports the process of developing, accessing, acquiring, implementing and using technology throughout Canadian industry. IRAP has a 50-year history of providing technical advice and assistance to Canadian firms and has acquired a reputation as one of the most flexible and effective federal programs. IRAP takes advantage of the advice of industrial technology advisors who are situated in more than 165 different locations within approximately 90 communities across Canada, including numerous provincial technology centres, the NRC's own laboratories and research institutes, federal government departments, and technology transfer offices in Canadian universities. For further information, contact:

Industrial Research Assistance Program
National Research Council
Montreal Road
Building M-55
Ottawa, ON K1A 0R6
Tel.: (613) 993-1790
Fax: (613) 952-1079

Canadian Commercial Corporation (CCC)

CCC, a Crown corporation, provides Canadian exporters with valuable assistance when they are selling to any foreign government, or to an international organization. In such sales, CCC acts as a prime contractor and guarantor for the sale of Canadian goods and services to the foreign customer.

CCC certifies the Canadian exporter's financial and technical capabilities, and guarantees to the foreign buyer that the terms and conditions of the contract will be met. CCC's participation in a sale provides Canadian suppliers with the tangible backing of their own government, enhancing their credibility and competitiveness in the eyes of foreign customers. This can often lead to the negotiation of more advantageous contract and payment terms.

The Progress Payment Program, developed by CCC in cooperation with Canada's financial institutions, makes pre-shipment export financing more accessible to small- and medium-sized exporters. The program allows an exporter to draw on a special line of credit, established by his or her principal banker for a particular export sale. In most instances, the borrowing costs will approximate those associated with a typical demand line of credit. The program is available for transactions with foreign government and private sector buyers.

For more information about CCC and its programs, contact:

Canadian Commercial Corporation
50 O'Connor Street
Eleventh Floor
Ottawa, ON K1A 0S6
Tel.: (613) 996-0034
Fax: (613) 995-2121

Key Contacts in Canada

Business and Professional Associations

Canadian Environment Industry Association (CEIA)
6 Antares Drive
Suite 204
Phase 2
Nepean, ON K2E 8A9
Tel.: (613) 723-3525
Fax: (613) 723-0060

Canadian Environment Industry Association (CEIA) B.C.
c/o Environment & Economic Systems Development Corporation
2397 Nelson Ave.
West Vancouver, BC V7V 2R1
Tel.: (604) 922-1658
Fax: (604) 926-5415

Environmental Services Association of Alberta (ESAA)
250-10508 82nd Ave.
Edmonton, AB T6E 2A4
Tel.: (403) 439-6363 or 1-800-661-waste
Fax: (403) 439-4249

Saskatchewan Environmental Managers Association/Special Waste Services Association of Saskatchewan (SEMA/SWSAS)
122-15 Innovation Blvd.
Saskatoon, SK S7N 2X8
Tel.: (306) 975-0660
Fax: (306) 975-2032

Manitoba Environmental Industries Association (MEIA)
501-D Weston Street
P.O. Box 192, Station L
Winnipeg, MB R3H 0Z5
Tel.: (204) 775-6157
Fax: (204) 755-9381

Canadian Environment Industries Association — Ontario (CEIA-Ontario)/
63 Polson St., 2nd Floor
Toronto, ON M5A 1A4
Tel.: (416) 778-6590
Fax: (416) 778-5702 / 778-6599

L'Association des Entrepreneurs de Services en Environnement du Québec (AESEQ)
232-1400, rue Sauvé ouest
Centre d'Achat l'Acadie Sauvé
Montréal, PQ H4N 1C5
Tel.: (514) 745-5380
Fax: (514) 745-3582

New Brunswick Environment Industries Association
c/o Geobac Technology Group Inc.
P.O. Box 367, Stn. A
Fredericton, NB E3B 5B3
Tel.: (506) 451-1991
Fax: (506) 457-2100

Nova Scotia Environment Industries Association
International Marine Biodiversity Development Corporation
5 Lyngby Ave.
Dartmouth, NS B3A 3T5
Tel.: (902) 465-2743
Fax: (902) 461-0799

Newfoundland Environment Industries Association (NEIA)
Box 43, Atlantic Place
602-215 Water Street
St. John's, NF A1C 6C9
Tel.: (709) 722-3786
Fax: (709) 722-3879

Association of Consulting Engineers of Canada
130 Albert Street
Suite 616
Ottawa, ON K1P 5G4
Tel.: (613) 236-0569
Fax: (613) 236-6193

Canadian Council for the Americas (CCA)
The Council is a non-profit organization formed in 1987 to promote business interests in Latin American as well as Caribbean countries. The CCA promotes events and programs targetted at expanding business and building networking contacts between Canada and the countries of the region.

Canadian Council for the Americas
Executive Offices
360 Bay Street
Suite 300
Toronto, ON M5H 2V6
Tel.: (416) 367-4313
Fax: (416) 367-5460

Canada-Chile Chamber of Commerce
3445 Ashby Street
Saint Laurent, PQ H4R 2K3
Tel.: (514) 339-2528
Fax: (514) 339-1607

Alliance of Manufacturers and Exporters Canada
99 Bank Street
Suite 250
Ottawa, ON K1P 6B9
Tel.: (613) 238-8888
Fax: (613) 563-9218

Alliance of Manufacturers and Exporters Canada
75 International Boulevard
Fourth Floor
Etobicoke, ON M9W 6L9
Tel.: (416) 798-8000
Fax: (416) 798-8050

The Canadian Chamber of Commerce
55 Metcalfe Street
Suite 1160
Ottawa, ON K1P 6N4
Tel.: (613) 238-4000
Fax: (613) 238-7643

Forum for International Trade Training Inc.
155 Queen Street
Suite 608
Ottawa, ON K1P 6L1
Tel.: (613) 230-3553
Fax: (613) 230-6808

Language Information Centre
240 Sparks Street RPO
Box 55011
Ottawa, ON K1P 1A1
Tel.: (613) 523-3510

Open Bidding Service
P.O. Box 22011
Ottawa, ON K1V 0W2
Tel.: 1-800-361-4637 or (613) 737-3374
Fax: (613) 737-3643

Canadian Standards Association
178 Rexdale Blvd.
Etobicoke, ON M9W 1R3
Tel.: (416) 747-4000
Fax: (416) 747-4149

Standards Council of Canada
45 O'Connor Street
Suite 1200
Ottawa, ON K1P 6N7
Tel.: (613) 238-3222
Fax: (613) 995-4564

Chilean Government Offices in Canada

The Embassy of Chile and the Chilean consulates can provide assistance and guidance to Canadian companies in need of information about the immigration regulations related to doing business in Chile. For more information, contact:

Embassy of Chile
151 Slater Street
Suite 605
Ottawa, ON K1P 5H3
Tel.: (613) 235-4402
Fax: (613) 235- 1176

ProChile
170 Bloor Street West, Suite 801
Toronto, ON M5S 1T9
Tel.: (416) 924-0176
Fax: (416) 924-2627

Chilean Consulate in Montreal
1010 Sherbrooke Street West
Suite 710
Montreal, PQ H3A 2R7
Tel.: (514) 499-0405
Fax: (514) 499-8914

Chilean Consulate in Toronto
170 Bloor Street
Suite 800
Toronto, ON M5S 1T9
Tel.: (416) 924-0106/0112
Fax: (416) 924-9563

Chilean Consulate in Vancouver
1185 West Georgia Street
Suite 1250
Vancouver, BC V6E 4E6
Tel.: (604) 681-9162, 683-9161
Fax: (604) 682-2445

Honourary Consul in Edmonton
104 Street
Suite 7912
Edmonton, AB T6E 4C8
Tel.: (403) 439-9839
Fax: (403) 433-2376

Honourary Consul in Winnipeg
59 Emily Street
Winnipeg, MA R3E 1Y9
Tel.: (204) 787-4259
Fax: (204) 889-4410

Canadian Government Departments and Services in Chile

Commercial Section
Canadian Embassy in Chile
Casilla 771
Nueva Tajamar 481
Torre Norte, Piso 12
Santiago, Chile
Tel.: (56-2) 362-9660
Fax: (56-2) 362-9664

Key Contacts in Chile

Chilean Government Departments and Agencies

Chilean Copper Commission
Comisión Chilena del Cobre (COCHILCO)
Agustinas 1116, Piso 4
Santiago, Chile
Tel.: (56-2) 672-6219
Fax: (56-2) 672-3584

Ministry of Mining
Ministerio de Minería
Teatinos 120, Piso 9
Santiago, Chile
Tel.: (56-2) 671-4373
Fax: (56-2) 698-9262

Natural Resources Information Center
Centro de Información de Recursos Naturales (CIREN)
Av. Manuel Montt 1164
Providencia
Santiago, Chile
Tel.: (56-2) 223-6641
Fax: (56-2) 209-6407

Chilean Energy Commission
Comisión Chilena de Energía (CCHEN)
Av. Francisco Bilbao 12501
Providencia
Santiago, Chile
Tel.: (56-2) 273-1827
Fax: (56-2) 273-8723

Foreign Investment Committee
Comité de Inversiones Extranjeras
Teatinos 120, Piso 10
Santiago, Chile
Tel.: (56-2) 698-4254
Fax: (56-2) 698-9476

National Energy Commission
Comisión Nacional de Energía (CNE)
Teatinos 120, Piso 7
Santiago, Chile
Tel.: (56-2) 698-1757
Fax: (56-2) 695-6404

National Forestry Association
Corporación Nacional Forestal (CONAF)
Av. Presidente Bulnes 285, Oficina 703
Santiago, Chile
Tel.: (56-2) 696-6677
Fax: (56-2) 671-2007

National Commission for the Environment
Comisión Nacional del Medio Ambiente (CONAMA)
Obispo Donoso 6
Providencia
Santiago, Chile
Tel.: (56-2) 240-5600
Fax: (56-2) 244-1263

Ministry of Economics, Devlopment and Reconstruction
Ministerio de Economía, Fomento y Reconstrucción (MEFR)
Teatinos No. 120, Piso 9
Santiago, Chile
Tel.: (56-2) 673-1128
Fax: (56-2) 698-3642

National Development Agency
Corporación de Fomento de la Producción (CORFO)
Moneda 921
Santiago, Chile
Tel.: (56-2) 638-0521, 631-8200
Fax: (56-2) 671-1058

Technological Research Institute — a division of *CORFO*
Instituto de Investigaciones Tecnológicas (INTEC)
Santa María 6400
Vitacura
Santiago, Chile
Tel.: (56-2) 218-6727
Fax: (56-2) 218-5307

National Copper Mining Company
Corporación Nacional del Cobre de Chile (CODELCO-CHILE)
Purchasing Office
Huérfanos 1270
Santiago, Chile
Tel.: (56-2) 690-3242
Fax: (56-2) 690-3059/3833

Irrigation Department
Dirección de Riego (DR)
Morandé 59, Piso 5
Santiago, Chile
Tel.: (56-2) 698-2969
Fax: (56-2) 671-0764

Metropolitan Regional Sanitary Works Company
Empresa Metropolitana de Obras Sanitarias S.A. (EMOS)
Av. Presidente Bulnes 129
Santiago, Chile
Tel.: (56-2) 696-4201
Fax: (56-2) 672-2841

National Mining and Smelting Company
Empresa Nacional de Minería (ENAMI)
Mac Iver 459
Santiago, Chile
Tel.: (56-2) 637-5371
Fax: (56-2) 637-5402

National Petroleum Company
Empresa Nacional del Petróleo (ENAP)
Ahumada 341, Oficina 6
Santiago, Chile
Tel.: (56-2) 639-1845
Fax: (56-2) 638-0164

Fisheries Development Institute
Instituto de Fomento Pesquero (IFOP)
José Domingo Cañas 2277
Nuñoa
Santiago, Chile
Tel.: (56-2) 225-6325, 204-7858
Fax: (56-2) 225-4362

Forestry Institute
Instituto Forestal de Chile (INFOR)
Huérfanos 554
Santiago, Chile
Tel.: (56-2) 639-6189
Fax: (56-2) 638-1286

National Standards Institute
Instituto Nacional de Normalización (INN)
Matías Cousiño 64, Piso 6
Santiago, Chile
Tel.: (56-2) 696-8144
Fax: (56-2) 696-0247

Public Health Institute
Instituto de Salud Pública (ISP)
Av. Maratón 1000
Nuñoa
Santiago, Chile
Tel.: (56-2) 239-1105
Fax: (56-2) 239-0862

Ministry of National Resources
Ministerio de Bienes Nacionales (MBN)
Juan Antonio Ríos 6
Santiago, Chile
Tel.: (56-2) 633-9305
Fax: (56-2) 632-5223

Ministry of Transportation and Telecommunications
Ministerio de Transportes y Telecomunicaciones
Amunátegui 139
Santiago, Chile
Tel.: (56-2) 672-6503
Fax: (56-2) 671-1978

Ministry of Public Works
Water Management Department
Ministerio de Obras Públicas (MOP)
Dirección General de Aguas (DGA)
Morandé 59, Piso 8, Oficina 601
Santiago, Chile
Tel.: (56-2) 698-5341, 672-2124
Fax: (56-2) 672-6609

Ministry of Health
Ministerio de Salud (MINSAL)
McIver 5441
Santiago, Chile
Tel.: (56-2) 639-4001
Fax: (56-2) 638-4377

Office of Agricultural Studies and Policy
Oficina de Estudios y Políticas Agrarias (ODEPA)
Teatinos 40, Piso 8
Santiago, Chile
Tel.: (56-2) 696-3241
Fax: (56-2) 671-0953

Fixed Pollution Source Control Program
Programa de Control de Emisiones de Fuentes Fijas (PROCEFF)
Olivares 1229, Piso 5
Santiago, Chile
Tel.: (56-2) 699-4920
Fax: (56-2) 699-3660

Agricultural and Livestock Service
Servicio Agrícola Ganadero (SAG)
Av. Presidente Bulnes 140, Piso 8
Santiago, Chile
Tel.: (56-2) 698-2244
Fax: (56-2) 672-1812

Metropolitan Environmental Health Service of the Ministry of Health
Servicio de Salud Metropolitano del Ambiente (SESMA)
Ministerio de Salud
Olivares 1229, Piso 5
Santiago, Chile
Tel.: (56-2) 699-5035
Fax: (56-2) 699-3660

Technical Cooperation Service
Servicio de Cooperación Técnica (SERCOTEC)
Huérfanos 1117, Piso 9
Santiago, Chile
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Celulosa y Papel, Revista
Asociacion Técnica de la Celulosa y el Papel — Chile
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